D. FISH AND WILDLIFE

(a) Existing Conditions

The Village originally consisted of a broad low-lying expanse of meadow and marshland, extending in some areas a considerable distance south from the shoreline, surrounded by a series of low hills further back from the water. Today... "much of the lower, or northerly portion of the Village, consists of filled in marshland with some vestigial wetland remaining, particularly along the easterly extremity of the waterfront between the business district and Little Northwest Creek." The southern portion of the Village is higher ground than the northern portion, creating a natural drainage basin which drains towards the low-lying area adjacent to the waterfront.

Wetlands within the Village of Sag Harbor have been classified by the NYSDEC as either tidal or freshwater, based on the vegetation they support. The type of vegetation is largely determined by the salinity of the surface water and the degree of inundation. The depth of water and the predominance of certain vegetative species serve as indicators to help distinguish between different types of wetlands.

Tidal Wetlands

The tidal wetlands found within the Village of Sag Harbor, as shown on Figure 6, consist of the following four, major types: intertidal marsh (IM); high marsh (HM); coastal shoals, bars and mudflats (SM); and littoral zone (LZ). These wetland types are described as follows.

- Intertidal Marsh - An **IM** classification is assigned to those wetland areas located between average high and low tide levels, and within which smooth cordgrass (*Spartina alterniflora*) is the predominant vegetative species. IM areas are the most biologically productive of all wetlands categories, and have high values for flood and sediment control. Even small patches of IM wetland are considered by the NYSDEC to be of critical importance.

- High Marsh - **HM** areas are normally the uppermost tidal wetland zone, and are typically dominated by salt meadow cordgrass (*Spartina patens*) and salt grass (*Distichlis spicata*). The upper limit of this zone is often occupied by marsh elder (*Iva frutescens*) and groundsel bush (*Baccharis halimifolia*). The common reed (*Phragmites australis*) may also be present, especially in areas that have been disturbed by human activities.

- Coastal shoals, bars and mudflats - **SM** wetlands are those areas lacking smooth cordgrass that are covered by water at high tide and are exposed or covered by less than one foot of water at low tide. Sediment texture can vary significantly in SM areas, from mud flats in many protected embayments to sandy shoals in areas subject to wave and current action.

- Littoral zone - **LZ** wetlands occur in tidal waters of average depth less than six feet that do not meet the requirements for classification under any of the other wetland categories. SM and LZ areas exhibit extreme variability in their contribution to biological productivity and other tidal wetland values, but are generally less valuable than IM or HM areas in this regard.

Tidal wetlands perform a variety of useful functions, including the following:

- Marine Food Production - tidal wetlands are among the most productive ecosystems in the world, having a high concentration of nutrients.

- Wildlife Habitat - tidal wetlands are important as breeding, nesting, and feeding grounds for a variety of invertebrates, fishes, birds, and mammals.

- Flood and Storm Control - tidal wetlands serve as a natural buffer, protecting beaches and developed upland from storm tides and absorbing wave damage.

- Recreation - tidal wetlands provide many opportunities for hunting, fishing, bird watching, and study of natural history and ecology.

- Pollution Control - tidal wetlands are capable of assimilating pollutants and chemically and biologically converting them into useful nutrients.

- Sedimentation - tidal wetlands absorb silt and organic matter, which otherwise would obstruct channels and harbors.

Eelgrass (*Zostera marina*) is an important type of marine vegetation that is found in some portions of the waters adjacent to the Village. Due to the attenuation of solar radiation by the water column, the distribution of this species in turbid estuarine waters is typically limited to depths of ten feet or less. Since this extends beyond the six-foot depth limit of the littoral zone according to the NYSDEC's regulatory definition, eelgrass beds can be found in areas that are not officially designated by the State as tidal wetlands. Eelgrass does not grow well in areas of shoals and flats that become uncovered during low tides, due to the plant's susceptibility to desiccation and heat stress under conditions of air exposure and elevated temperatures.

The primary ecological functions served by eelgrass include the following:

- provides a large portion of the primary production that forms the base of the estuarine food chain;

- provides nursery areas, and shelter and protection for various species of finfish and invertebrates, many of which are of recreational or commercial importance;

- provides surfaces for the attachment of various epiphytes and epifauna, which increases species diversity and abundance compared to areas that lack vegetation;

- provides an important habitat for the bay scallop (*Argopecten irradians*), which historically has been an important commercial resource in the Peconic Estuary;

- is involved in nutrient cycling, since these plants absorb nutrients (e.g., nitrogen and phosphorus) from the surrounding environment, and re release those nutrients through organic decay;

- stabilizes bottom sediments, even through the enormous stresses of hurricanes and northeast storms; and

- slows currents and waves in the near-bottom zone and, thereby, promotes sedimentation of particles from the water column, inhibits re-suspension of previously settled particles, and moderates water column turbidity.

Macro algae, which are commonly referred to as "seaweeds," also serve most of the ecological functions listed above. However, there are important distinctions. Although many species of macro algae become attached to hard bottoms (e.g., rocks, shells), these plants lack true roots or rhizome systems and, therefore, provide no stabilization to the substrate. In addition, the special association of bay scallops with marine vegetation is specific to eelgrass meadows, and does not generally apply to macro algae beds.

In the late summer and early fall of 1994, an initial survey of submerged aquatic vegetation (SAV) throughout the Peconic Estuary system was conducted as part of the ongoing research for the Peconic Estuary Program (Cashin Associates, P.C., draft report to the Suffolk County Department of Health Services, February 1995). Direct field observations were made at a total of 214 stations, with supplemental information derived from the interpretation of aerial photographs that were shot in the spring and early fall of 1994. In field data were recorded regarding SAV species present, and SAV density and abundance measurements were made. Various physical parameters (i.e., water temperature, salinity, visibility, depth, and bottom sediment type) were also recorded.

Of the six field stations for the SAV Study, two in Sag Harbor Bay, three within Outer Sag Harbor Cove, and one within Inner Sag Harbor Cove --- all of which were visited in early October 1994 --- the two stations in Sag Harbor Bay contained moderately dense eelgrass meadows that extended in a relatively unbroken band from the east side of the breakwater to the mouth of Northwest Creek. The presence of eelgrass beds in this area was noted in the 1983 Natural Resources Inventory Update for the Sag Harbor Local Waterfront Revitalization Program (LWRP). Additional expanses of eelgrass beds occurred in adjacent waters, stretching along the eastern shore of Northwest Harbor, the northern shore of the Cedar Point

County Park property to Sammys Beach, the eastern side of the North Haven peninsula, and the easterly and southerly-facing shores of the Mashomack Preserve on Shelter Island.

The two field stations in the northern portion of Outer Sag Harbor Cove were devoid of SAV. The two remaining stations within the local waterfront revitalization area (i.e., in the southerly end of the Outer Cove and in the Inner Cove) were found to contain only scattered specimens of the red macro algae species *Cystoclonium purpureum* (brushy redweed). These data are consistent with information provided in the "1983 Natural Resources Inventory Update" for the 1986- LWRP.

Interestingly, it was reported that the Sag Harbor Cove Complex had supported eelgrass beds in the recent past. In fact, the 1983 Natural Resources Inventory Update for the LWRP indicates that eelgrass beds covered much of the bottom in Upper Sag Harbor Cove and Morris Cove at that time. However, no living eelgrass was found during the October 1994 field surveys conducted in these areas as part of the SAV Study. This information correlates with evidence from aerial photographs taken in March 1994 and October 1994, which indicate that a decline in eelgrass distribution and abundance occurred along the eastern shoreline of the North Haven peninsula and in the Sag Harbor area during that seven-month period. Thus, the sampling performed as part of the SAV Study may have recorded a distribution of eelgrass at a time when it is experiencing a significant decline.

Numerous factors are known or suspected to have an influence on the distribution and abundance of eelgrass in the Peconic Estuary system. These include: seasonal variables, disease, nutrient enrichment, and brown tide episodes, which are discussed individually below.

Eelgrass beds undergo normal growth variation in response to seasonal changes in water temperature and incident solar energy. This seasonal variation generally includes vegetative growth in the spring, reproductive growth and seed production during the summer, possibly with a marked dieback in the hottest part of the summer, additional vegetative growth in the fall, and winter dieback. Periods of prolonged high or low water temperatures can cause a decline in the eelgrass beds that are not fully compensated by the growing season during the following spring or fall.

Between 1931 and 1932, an epidemic of the so-called "wasting disease" led to the destruction of an estimated 90 percent of the eelgrass along the Atlantic coast. Plant symptoms included a rapidly progressing blackening of the leaves, followed by the death of the entire plant. The responsible organism was a slime, mold-like protozoan, *Labyrinthula zosterae*, that is worldwide in distribution and has infected eelgrass plants where no actual population declines have yet been observed. The combined effect of environmental factors conducive to the growth of *Labyrinthula* and which induce stress in eelgrass appears to be responsible for episodes of the disease. Based on initial anecdotal accounts of an ongoing dieback occurring in eelgrass beds in and around the Sag Harbor Cove area, it has been speculated that another incidence of wasting disease may be at work.

There are three scenarios of an eelgrass community's response to nutrient enrichment of coastal waters, described as follows: (a) nutrient loading to surface waters derived primarily from stormwater runoff and sewage effluent can spur excessive **phytoplankton growth** (i.e., "blooms"), which decrease water column transparency and can, thereby, decrease the degree of sunlight penetration to the point that eelgrass beds no longer receive sufficient solar energy to survive; (b) elevated nutrient levels can enhance **epiphyte growth**, which can diminish the amount of light absorption by the eelgrass plants; and (c) elevated nutrient levels can accelerate the growth of **green or red macro algae**, which absorb nutrients more rapidly than eelgrass, and can crowd out the eelgrass beds. All three of these effects (i.e., phytoplankton domination, excessive epiphyte growth, and macro algae domination) promote a reduction in eelgrass density that can ultimately lead to the elimination of an eelgrass population altogether.

Brown tides are extensive blooms of a single species of the rapidly reproducing phytoplankton *Aureococcus anophagefferens*, first identified in 1985. The causes for the onset of a brown tide bloom are presently unknown, although various theories are under investigation. However, it does not appear that enrichment of coastal bays with the more traditional inorganic nutrients is a major factor in brown tide development; field surveys undertaken as part of the Brown Tide Comprehensive Assessment and Management Program (Suffolk County Department of Health Services, November 1992) revealed that the concentrations of nitrate, nitrite, and phosphate were not elevated prior to and during recent brown tide episodes in the Peconic Estuary.

During a brown tide bloom, the normal depth of sunlight penetration is greatly reduced due to high concentrations of *Aureococcus* suspended in the water column. This shading effect has been cited as being at least partially responsible for the reported loss of eelgrass in the Peconic system, and the coincident dramatic decline in the Estuary's shellfishery. However, whereas catch data for scallops and oysters (*Crassostrea virginica*) show a dramatic crash in the harvest of these two species that corresponds directly with the occurrence of brown tide episodes, the effect of recent brown tides on eelgrass distribution and abundance is less readily apparent. An analysis of historical aerial photographs conducted as part of the SAV Study (Cashin Associates, P.C., draft report to the Suffolk County Department of Health Services, February 1995) did not indicate a consistent trend of decline in the distribution and abundance of eelgrass beds in the Peconic Estuary during brown tide years. Thus, other factors, besides the presumed loss of eelgrass habitat, have apparently played influential roles in the observed decline in scallop and oyster populations.

Estuary Systems

The estuarine environment within the Village of Sag Harbor consists of a large open embayment, a semi-enclosed man-made mooring area, a series of interconnected tidal basins, a tidal pond and a small tributary draining into Sag Harbor Bay. The most seaward of these water bodies is Sag Harbor Bay, followed by a man-made mooring area called Sag Harbor. The interior water bodies consist of a series of at least three inland tidal embayments known

collectively as Sag Harbor Cove, actually consisting of Outer Sag Harbor Cove, Inner Sag Harbor Cove, Upper Sag Harbor Cove and Morris Cove. Ligonee Brook is a small freshwater brook that drains into the southwestern end of Inner Sag Harbor Cove. Otter Pond is a tidal pond just north of Mashashimuet Park. John Street Pond is an isolated intertidal pond that is connected to Upper Sag Harbor Cove. Little Northwest Creek is the small tributary draining into greater Sag Harbor on the eastern Village boundary. The qualitative water quality classification system utilized in the following narrative is based on the ranking system discussed in Section 2.3B(b).

The surface water bodies and tidal wetlands which occupy the Village of Sag Harbor LWRP area are described briefly as follows (see Figure 6):

- Sag Harbor Bay

Sag Harbor Bay is a shallow sub tidal embayment adjunct to Northwest Harbor and Shelter Island Sound. There is very little intertidal vegetation within the bay area, except a small patch of smooth cordgrass (*Spartina alterniflora*) occurring just east of the breakwater. The shallower sub-tidal portions of the bay, however, support extensive beds of eelgrass (*Zostera marina*). The surface water quality classification for Sag Harbor Bay is SA.

- Sag Harbor

Sag Harbor is a semi-enclosed, man-made mooring area at the entrance to Outer Sag Harbor Cove. This area is protected from the open sea by an elongated stone breakwater and is connected to Outer Sag Harbor Cove by a tidal strait spanned by the North Haven/State Route 114 Bridge. This area experiences incomplete tidal flushing twice daily by strong tidal currents. Water quality is strongly affected by boat traffic and dock/marina facilities. As discussed in Section 2.3B(b), the surface water quality classifications for these water bodies is SA.

- Sag Harbor Cove Complex

The Sag Harbor Cove Complex is a series of basins (Outer Sag Harbor Cove, Inner Sag Harbor Cove, Upper Sag Harbor Cove and Morris Cove) that are interconnected by narrow navigation channels; a strait from the northern end of the Cove connects these waters to Sag Harbor. The overall surface area of the Sag Harbor Cove system is approximately 0.7 square miles; average depth within this area is approx. 4.9 feet. The entire cove complex is nearly well-mixed and is strongly influenced by coastal salinities. The surface water quality classification for the cove complex is SA.

The series of embayments that comprise the Sag Harbor Cove Complex consists of some of the most productive waters within the Village of Sag Harbor. The intertidal fringe of the Cove is surrounded by typical estuarine marsh species (*Spartina alterniflora & patens*) where structural fortification and dock facilities are absent. The width of the fringe is determined by the slope of the intertidal shoreline and the presence of upland disturbances and barriers. In the shallow intertidal waters starting at the marsh fringe there are extensive areas of highly productive mudflats and sand bars colonized by numerous species of algae including: bladder wrack (*Fucus vesiculosus*), knotted wrack (*Ascophyllum nodosum*) and Irish moss (*Chondorus crispus*). Sea lettuce (*Ulva lactuca*) common throughout the cove is indicative of high nutrient conditions. Deeper waters within the cove support dense beds of eelgrass (*Zostera marina*) which provides shelter for young bay scallops and greatly increases primary productivity.

- Little Northwest Creek

Little Northwest Creek is a small tributary feeding into the eastern portion of Sag Harbor Bay. This creek is divided into tidal and freshwater segments. The tidally-influenced segment is surrounded by approximately 190 acres of State-owned wetland and vegetated upland that is managed by the NYSDEC. The intertidal portions of the marsh consist of undisturbed high marsh with salt meadow cordgrass (*Spartina patens*), spike grass (*Distichlis spicata*), black grass (*Juncus gerardii*), perennial glasswort (*Salicornia virginica*), sea lavender (*Limonium carolinianum*), perennial salt marsh aster (*Aster tenuifolius*) and seaside gerardia (*Agalinis maritima*), with a low marsh fringe with smooth cordgrass (*Spartina alterniflora*). The upland fringe is dominated by a narrow to wide stand of common reed (*Phragmites australis*). Reeds are more extensive in the upper reaches of the tidally influenced portion of the creek. The surface water quality classification for the tidal segment of Little Northwest Creek is SC. The freshwater segment of this creek, which is discussed below, is classified B.

- Otter Pond

Otter Pond is a shallow intertidal pond of approximately 4 acres located within Mashashimuet Park. Otter Pond receives saltwater from a tidal creek originating in Upper Sag Harbor Cove which flows under Main Street (CR 79). Tidal fluctuation for the pond is approximately 1 foot, while the tidal amplitude in Upper Sag Harbor Cove is approximately 1.7 feet.

Freshwater enters the eastern end of the pond from a large Maple swamp across Jermain Street between Joel's Lane and Archibald Way.

The quality of Otter Pond is generally poor (SC classification) with a silty organic bottom and near eutrophic conditions. Extensive growth of sea lettuce (*Ulva lactuca*) are indicative of a high nutrient flux. Widgeon grass (*Ruppia maritima*) is also found in the pond. The creek running under Main street has a water quality classification of SD.

At one time, Otter Pond was bordered by a healthy fringe of estuarine wetland. Today the majority of the pond perimeter is vegetated by turf grasses and only a fringe of smooth cordgrass (*Spartina alterniflora*) remains on the northern shorelines. Public use of Otter Pond consists primarily of feeding the many domesticated water fowl and relaxing on the pond shores. Waterfowl concentrations in this area have contributed significantly to the degradation of the water quality in Otter Pond.

- Ligonee Brook

Ligonee Brook is a small freshwater brook running from east to west, draining into the southeastern end of Inner Sag Harbor Cove. The Sag Harbor Village boundary is centrally located along the entire length of the brook. For surface water classification purposes, this creek is conveniently divided into two reaches: from the mouth to Brick Kiln Road, and from Brick Kiln Road to the source. Water quality in the estuarine portion of the brook is classified SC; from Brick Kiln Road to the source it is classified C. West of Brick Kiln Road in the lower reach of the Brook there is some salt water influence; east of the road in the upper reaches there is little if any salt influence except during extreme storm surges.

The entire length of the lower intertidal portion of Ligonee Brook is bordered by typical estuarine marsh vegetation (i.e., cordgrass and salt hay grass) with pockets of Common Reed (*Phragmites australis*) where upland disturbance has taken place. Just west of Brick Kiln Road, there is occasional tidal influence, but the species composition is more representative of a freshwater-dominated wetland with a small pocket of maple swamp north of the creek adjacent to Brick Kiln Road. This extremely small maple swamp is unique to this portion of the Village. The upper, freshwater portion of Ligonee Brook is discussed below.

- John Street Pond

The John Street Pond is an isolated intertidal pond and associated wetland fringe that is connected to Upper Sag Harbor Cove via a culvert running under John Street. Freshwater enters the southwestern portion of the area through storm drains and flows towards the culvert at the northeastern corner of the pond. The pond is very shallow with a sandy bottom overlain by pockets of organic matter. Tidal fluctuation is minimal due to restrictions caused by the diameter and elevation of the culvert under John Street. Vegetation surrounding the pond is typical of disturbed estuarine marsh; common reed (*Phragmites australis*) forms a dense stand

at the upland edge of otherwise native intertidal species such as cordgrass (*Spartina alterniflora*) and salt hay grass (*Spartina patens*). Poison ivy and switchgrass (*Panicum virgatum*) are also well represented at the site.

Freshwater Systems

An updated wetland inventory has been compiled for the Village (Blumer, 1994). This map includes NYSDEC regulated wetlands with some additions as well as some previously unrecognized and therefore unregulated wet areas in the Village. These wetlands and additional areas are shown in Figure 6. The following freshwater systems can be found on this figure, and are the most significant of the freshwater wetland systems within Sag Harbor:

- Ligonee Brook

The headwaters of Ligonee Brook originate outside of the Village boundary within the Long Pond Green Belt Complex. The upper reaches of the Brook that lie within the Village run from Middle Line Highway to Brick Kiln Road. Most years water flows intermittently in this portion of Ligonee Brook; on wet years this reach may run continuously. There is some disturbance to native vegetation surrounding the Brook, but for the most part there is a dense cover of native species within the corridor surrounding the stream-bed. The upper portion of the Brook has a surface water quality rating of C.

- Round Pond

Round Pond is an approximately 7-acre freshwater pond lying within the northern end of the Long Pond Green Belt system designated by the Nature Conservancy. Only the northern portion of the pond lies within Sag Harbor Village, at the southern end of Joel's Lane. This green belt, which runs from Mashashimuet Park in the north to Sagaponack Lake and the Atlantic Ocean in the south, is a wildlife and open space corridor which has received special attention from the Nature Conservancy and Southampton Town. This entire area is a relatively undisturbed system of ponds, wetlands and surrounding woodlands.

There is some development around the perimeter of Round Pond, with little structural fortification. Seven houses have been built in close proximity to the pond, three of which have lawns extending down to the shoreline. Several more houses are set back further from the shoreline. The west shoreline of the pond is natural and undisturbed.

This pond, and the associated native species surrounding its shoreline, are unique within the Village of Sag Harbor and deserve special protection. Surface water quality for this water body is rated as C. The quality of the coastal plain pond shore habitat at the site has been rated as "B" by the Natural Heritage Program standards. This rating system is based on several factors including: relative quality, condition, viability and defensibility of the site. An "A" is the highest habitat assessment rating.

- Fore and Aft Pond

Fore and Aft Pond is a one-acre wetland pond, directly west of Round Pond. This wetland pond is hydrologically connected (through groundwater) to Round Pond. This area is well buffered by native vegetation and has a coastal plain pond shore habitat with one State rare species identified by the New York State Natural Heritage Program. Water quality for this pond has not been classified, but the coastal plain pond shore habitat on the site was given a rating of "BC" from the Natural Heritage Program. Several years ago this pond was severely impacted by the activities of a developer who attempted to drain the pond by excavating a large hole (Held, pers. com.). The system seems to have survived, but the effects of this major disturbance may not be known for years. Fore and Aft Pond is included in the *Conservation Water Use District (CD).*

- Rattlesnake Creek

Rattlesnake Creek is a small freshwater sub-tributary of the Little Northwest Creek system lying on the eastern boundary of the Village. Most of the area is composed of flooded maple swamp with associated native understory vegetation. The northern boundary of the swamp abuts the large New York State wetland which surrounds Little Northwest Creek. For the most part, this maple swamp is intact and undisturbed. Dominant species include: red maple (*Acer rubrum*), sweet pepperbush (*Clethra alnifolia*), cinnamon fern (*Osmunda cinnamomea*) and swamp azalea (*Rhododendron viscosum*). Common reed (*Phragmites australis*) has not entered the Rattlesnake Creek area. Surface water quality for the head waters of Little Northwest Creek and Rattlesnake Creek is rated as B. Rattlesnake Creek is included in the *Conservation Water Use District (CD).*

- Maple Swamp feeding Otter Pond

This large wooded wetland lies between Joel's Lane and Archibald Way, southeast of Otter Pond. The perimeter of the area rises steeply on three sides where it meets the surrounding roads. The entire area has been heavily impacted by past trenching activity (Suffolk County Vector Control activity) which has significantly altered natural drainage patterns. Parallel and interconnecting ditches channelize all flow from south to north and generally preclude the natural water purification potential of this wooded wetland. Construction and maintenance (vegetation was cleared from the ditches as recently as the of summer 1994) of these ditches has enabled common reed (*Phragmites australis*) to become well established. Fortunately, this species is concentrated in the center of the wetland where ditching has had the greatest impact. The dominant tree species is red maple (*Acer rubrum*). The understory consists of sweet pepperbush (*Clethra alnifolia*), shadbush (*Amelanchier canadensis*), chokeberry (*Aronia arbutifolia*), highbush blueberry (*Vaccinium corymbosum*), and swamp azalea (*Rhododendron viscosum*). The herbaceous layer consists of soft rush (*Juncus effusus*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*) and skunk cabbage (*Symplocarpus foetidus*) - among others.

Water quality across the swamp is variable, with road runoff contributing to surface flow from both Joel's Lane and Archibald Way and groundwater base flow in the south. The system of channels can be roughly divided into east and west sections with little if any transfer between them. The west side of the system (Archibald Way) appears far more impacted by nutrient inputs than the east side (Joel's Lane). Trenches on this side are covered with dense algal growth while those of the east side have no indication of algal growth despite the fact that there are two stormwater discharges from Joel's Lane. Where the two sides of the system meet in the north there is some duckweed (*Lemna sp.*) growth. Maple Swamp is included in the *Conservation Water Use District (CD).*

(b) Fish and Wildlife Studies

General

The following information describes the various fish and wildlife habitats present within Village boundaries, focusing on wetlands and coastal areas. Upland habitats are not specifically addressed. However, since "uplands" within the Village are not far-removed from the coast and wildlife that use wetlands also uses upland habitats, the following introductory paragraphs will briefly describes wildlife that may be found throughout the Village.

Sag Harbor Village contains most, if not all, of the commonly found large and small mammal species (Table 3). A significant population of little brown bats (*Myotis lucifugus*) has also been located in the eastern end of the Village (Penny, pers. com.). There have also been sightings of a "black" gray squirrel in the Village. Mink (*Mustela vison*) were found in the area 20-30 years ago, but have not been seen recently.

Reptiles that can be found within Village boundaries include those that occupy strictly upland habitats as well as wet areas and the estuarine coastline (Table 4). The eastern hognose snake (*Heterodon platyrhinos*) may be present in the Sag Harbor, but to date there is no record of it being found. There is however, a significant population of the uncommon little brown snake (*Storeria dekayi*) residing in the Village (Penny, pers. com.).

As with all of the other wildlife described above, many of the more common species of amphibians can be found throughout the Village of Sag Harbor (Table 5). Significant populations are usually concentrated in or near wetlands, but these animals can be found wherever there is sufficient moisture.

Nesting coastal birds and winter waterbirds common to the area are listed in Appendix C and Appendix D, respectively.

Estuary Environment

- Sag Harbor

The large water body, Sag Harbor, is contiguous with Northwest Harbor. These two water bodies combined comprise a significant fin and shellfish habitat. Least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), and osprey (*Pandion haliaetus*) feed throughout this system. However, there have not been any recent osprey nests in the area. Diamondback terrapin (*Malaclemys t. terrapin*) breed along the bay coastline and feed in tidal creeks such as Little Northwest Creek. From November through March, Sag and Northwest Harbors support wintering waterfowl concentrations of county-level significance. Midwinter aerial surveys of waterfowl abundance have indicated from 400-1000 birds in Sag Harbor. From November through March, the following wintering waterfowl can be observed from Long Wharf: scaup (*Aythya sp.*), black duck (*Anas rubripes*), common goldeneye (*Bucephala clangula*), bufflehead (*Bucephala albeola*), red-breasted merganser (*Mergus serrator*), canvasback (*Aythya valisineria*), common loon (*Gavia immer*), mallard (*Anas platyrhynchos*) and Canada goose (*Branta canadensis*).

Sag Harbor and adjacent Northwest Harbor support expanses of eelgrass (*Zostera marina*) beds and for this reason are extremely productive habitats for marine fin and shellfish. This area is one of the most important bay scallop (*Aequipectin irradians*) producing areas on Long Island, supporting a commercial shellfishery significant in the northeastern United States. The 1994 harvest was the best in recent years. Oysters (*Crassostrea virginica*) are present in lesser numbers, providing limited recreational and commercial shellfishing opportunities. The bay also serves as a nursery and feeding area (April-November, generally) for many estuarine finfish of regional significance, such as weakfish (*Cynoscion regalis*), winter flounder (*Pseudopleuronectes americanus*) and porgy (*Stenotomus chrysops*). Fishing pressure in the area extends from spring through fall. Table 6 lists fish species of the Sag Harbor area.

The presence of the large stone breakwater protecting the mooring area in the Harbor attracts a large number of harbor seals (*Phoca vitulina*) a species of regional significance (Okeanos, 1994). Other species of seal such as harp seal (*Phoca groenlandica*) and grey seal (*Halichoerus grypus*) have been seen in this area on occasion (Sadove, 1994). During December through early May the exposed rocks near the Sag Harbor Cove jetty provide an important "haulout" area, which seals use for resting and sunning. This location is one of about five major haulouts around Long Island, serving as a focal point for seals feeding in the Sag Harbor area.

- Sag Harbor Cove Complex

The series of basins comprising the Sag Harbor Cove Complex, including Outer Sag Harbor Cove, Inner Sag Harbor Cove, Upper Sag Harbor Cove and Morris Cove, consist of some of the most productive waters within the Village of Sag Harbor. The intertidal fringe of the Cove

is surrounded by typical estuarine marsh species (*Spartina alterniflora & patens*) where structural fortification and dock facilities are absent. The width of the fringe is determined by the slope of the intertidal shoreline and the presence of upland disturbances and barriers. In the shallow intertidal waters starting at the marsh fringe there are extensive areas of highly productive mudflats and sand bars colonized by numerous species algae including: bladder rack (*Fucus vesiculosus*), knooted wrack (*Ascophyllum nodosum*) and Irish moss (*Chondorus crispus*). Sea lettuce (*Ulva lactuca*) common throughout the cove is indicative of high nutrient conditions. Deeper waters within the cove support very dense beds of eelgrass (*Zostera marina*) which greatly increases primary productivity. Bay scallops (*Aequipecten irradians*), which are often abundant in the Cove Complex, utilize this habitat. Hard clams (*Mercenaria*) can be found on both intertidal and sub tidal bottom.

In a 1992 study conducted by the Okeanos Ocean Research Foundation, significant numbers of diamondback terrapins (*Malaclemys terrapin*) were observed throughout the Cove Complex (Morreale, 1992). This area had a smaller apparent population then other locations studied, but was regionally significant.

Weakfish (*Cynoscion regalis*), striped bass (*Morone saxatilis*), winter flounder (*Pseudopleuronectes americanus*) and porgy (*Stenotomus chrysops*) have all been caught in the Cove. Late summer (1994) shallow water seining in the area indicated the presence of large numbers of locally-significant fish species including: bay anchovy (*Anchoa mitchilli*), menhaden (*Brevoortia tyrannus*), Atlantic silverside (*Menidia*), snapper bluefish (*Pomatomus saltatrix*) and winter flounder (*Pseudopleuronectes americanus*). Other species caught during this seining include: sheepshead minnow (*Cyprinodon variegatus*), mummichog (*Fundulus heteroclitus*), killifish (*Fundulus majalis*), three-spined stickleback (*Gasterosteus aculeatus*), naked goby (*Gobiosoma bosci*), Atlantic needle fish (*Strongylura marina*) and bay pipefish (*Syngnathus leptophynchus*).

- Little Northwest Creek

The tidal portion of Little Northwest Creek is typical of small estuarine creeks found in this area. Surrounding the creek is a 190-acre State-owned wetland and buffering upland managed by the NYSDEC. The intertidal portions of the marsh consist of undisturbed high marsh with salt hay grass (*Spartina patens*), spike grass (*Distichlis spicata*), black grass (*Juncus gerardii*), perennial glasswort (*Salicornia virginica*), sea lavender (*Limonium carolinianum*), perennial salt marsh aster (*Aster tenuifolius*) and seaside gerardia (*Agalinis maritima*) and a low marsh fringe with cordgrass (*Spartina alterniflora*). Both of these habitats are colonized by typical estuarine species of molluscs and arthropods (Table 7). The upland fringe is dominated by a narrow to wide stand of common reed (*Phragmites australis*). Reeds are more extensive in the upper reaches of the tidally influenced portion of the creek. Diamondback terrapins (*Malaclemys terrapin*) have been observed moving up the creek, and are known to utilize this area for feeding.

- Otter Pond

This very shallow habitat is characterized by high nutrient loads and near eutrophic conditions. At one time the pond was bordered by a healthy fringe of estuarine wetland. Today, the majority of the pond perimeter is vegetated by turf grasses. Extensive growth of sea lettuce (*Ulva lactuca*) is indicative of high-nutrient conditions. Much of the bottom of this water body is covered by a thick layer of organic sediment which contributes to nutrient availability and is indicative of high primary production and low decomposition rates. The Pond supports large numbers of waterfowl throughout the year. Domesticated Peking duck, mallard (*Anas platyrhynchos*), mute swan (*Cygnus olor*) and Canada goose (*Branta canadensis*) can be found here at any time of year. This area also supports significant wintering waterfowl concentrations. The most recent (1994) New York State winter waterfowl counts for Otter Pond include Canada goose (*Branta canadensis*), American black duck (*Anas rubripes*), canvasback (*Aythya valisineria*), and almost 200 mallard (*Anas platyrhynchos*) on the day of the count. Fin and shellfish species present are those typical of local estuarine water bodies. Late summer (1994) seining in Otter Pond yielded sheepshead minnow (*Cyprinodon variegatus*), mummichog (*Fundulus heteroclitus*), killifish (*Fundulus majalis*), three-spined stickleback (*Gasterosteus aculeatus*) and naked goby (*Gobiosoma bosci*). In the past striped bass (*Morone saxatilis*) have been caught in the Pond. Diamondback terrapins (*Malaclemys terrapin*) have utilized this area for feeding in the past.

- Ligonee Brook

The entire length of the lower intertidal portion of Ligonee Brook is bordered by typical estuarine marsh vegetation with pockets of common reed (*Phragmites australis*) where upland disturbance has taken place (e.g., near houses). Just west of Brick Kiln Road, there is occasional tidal influence, but the species composition is more representative of a freshwater-dominated wetland with a small pocket of Maple swamp north of the Creek adjacent to Brick Kiln Road, unique to this area of the Village. The vegetative buffer along the lower reaches of the brook, although narrow in places, affords considerable cover for amphibians, small mammals and migratory songbirds. The mouth of the brook supports common estuarine species of fish, molluscs and arthropods (Tables 6 & 7). In the estuarine portion of the Brook, amphibians are restricted to the upper reach near Brick Kiln Road. Late summer (1994) sampling in the Brook indicated only one fish species, killifish (*Fundulus majalis*). Alewives (*Alosa pseudoharengus*) were found in the area in the past, but have not been observed recently (Penny, pers. com.).

- John Street Pond

The John Street Pond is an isolated intertidal pond and associated wetland fringe that is connected to Sag Harbor Cove by a culvert running under John Street. Freshwater drains from the southwestern portion of the area towards the culvert at the northeastern corner of the pond. The pond is very shallow with a sandy bottom overlain by pockets of organic sediment. Tidal

fluctuation is minimal due to restrictions caused by the diameter and elevation of the culvert. Freshwater enters this system through two storm drains on Jesse Halsey Lane, just south of the corner with John Street. From here the water runs through a narrow ditch surrounded by an extremely dense stand of reed.

Vegetation surrounding the pond is typical of a disturbed estuarine marsh; common reed (*Phragmites australis*) dominates the upland edge of otherwise native intertidal species such as cordgrass (*Spartina alterniflora*) and salt hay grass (*Spartina patens*). The presence of the reeds forms an effective barrier around the entire pond system which is located in the middle of a residential neighborhood. As a result, this area acts as "oasis" in the center of this otherwise heavily populated area. Numerous species of nesting coastal birds have been observed at this site. The extremely shallow water is ideal for wading birds to feed. Fish species using this pond include: sheepshead minnow (*Cyprinodon variegatus*), mummichog (*Fundulus heteroclitus*) and killifish (*Fundulus majalis*). Numerous shellfish species including: oyster (*Crassostrea virginica*), ribbed mussel (*Modiolus demissus*), soft-shelled clam (*Mya arenaria*) and mud snail (*Nassarius obsoletus*) are evident in the pond.

Freshwater Systems

- Ligonee Brook

The freshwater portion of Ligonee Brook, east of Brick Kiln Road, comprises a significant wildlife corridor along the southern boundary of the Village. Dense plant cover throughout most of the area provides shelter for common species of migratory birds, small and large mammals, common reptiles and amphibians. Mammals, reptiles and amphibians are those commonly found throughout the Village (Tables 3, 4 & 5). At one time alewife (*Alosa pseudoharengus*) moved up the Brook as far as Brick Kiln Road, but they have not been seen for many years.

- Round Pond

Only the northern tip of this pond falls within Village boundaries. This water body and the associated smaller system to its west fall within the Long Pond Green Belt designated by the Nature Conservancy and Southampton Town. As such, this area is recognized as being significant to the maintenance and protection of open space and wildlife habitat in the area. The Natural Heritage Program rates Round Pond as a "B" in their qualitative assessment of the coastal plain pond shore habitat. An "A" is the highest rating possible. This pond/wetland complex and the Fore and Aft Pond system adjacent to it supports the most significant mole salamander population within the Village. Spotted salamander (*Ambystoma maculatum*), marbled salamander (*Ambystoma opacum*) and the tiger salamander (*Ambystoma tigrinum*) have all been found here (Penny, pers. com.). This may be the only location in the Village that supports these species. Commonly found amphibians include: fowlers toad (*Bufo fowleri*), eastern newt (*Demicttylus viridescens*), spring peeper (*Hyla crucifer*), gray treefrog

(*Hyla versicolor*), green frog (*Rana clamitans melanota*) and bullfrog (*Rana catesbeiana*). Painted turtles are found in this system and there may be spotted turtles (*Clemmys guttata*). During the early 90's a pair of otters was observed in the pond, but they have not been seen recently. Fish species observed in past surveys include: largemouth bass (*Micropterus salmoides*), pumpkinseed (*Lepomis gibbosus*), bluegill (*Lepomis macrochirus*) and common pickerel (*Esox sp.*) (Guthrie, pers. com.). Mammals and reptiles are those typical for the Village (Tables 3 & 4). Large populations of ducks and swans frequent this pond and are thought to reduce water quality through the input of organic waste.

The following significant upland and coastal plain pond shore species have been identified as being in this area by the New York Heritage Program: pine barren gerardia (*Agalinis vigata*), white milkweed (*Asclepias variegata*), silver aster (*Aster concolor*), rose coreopsis (*Coreopsis rosea*), knotted spikerush (*Eleocharis equisetoides*), creeping St. John's wort (*Hypericum adpressum*), carolina redroot (*Lachnanthes caroliana*), velvety lespedeza (*Lespedeza stuevei*), ludwigia (*Lugwigia sphaerocarpa*), crested fringed orchis (*Platanthera cirstata*) and wafer-ash (*Ptelea trifoliata*).

- Fore and Aft Pond

Fore and Aft Pond is a one acre wetland pond directly west of Round Pond. The Natural Heritage Program rates the quality of the coastal plain pond shore at this site as "BC." This system is hydrologically connected to Round Pond. For this reason, the entire system (both ponds) is the most significant mole salamander habitat in the Village - as noted above in the description for Round Pond. Fore and Aft Pond is fairly well buffered by native vegetation and supports the Heritage Program recognized, long-beaked bald-rush (*Psilocarya scirpoides*). As mentioned previously, this site suffered considerable damage as a result of the excavation by a developer. The effects of this disturbance have not been completely elucidated. Only time will tell whether this fragile system will survive.

- Upper Little Northwest Creek/Rattlesnake Creek

The headwaters of Little Northwest Creek and Rattlesnake Creek are surrounded by an expansive Maple swamp. These wetlands are classic habitat for spotted turtles (*Clemmys guttata*); mud turtles (*Kinosternum subrubrum*) would be expected in this area, but they have not been found. Commonly found amphibians include: fowlers toad (*Bufo fowleri*), eastern newt (*Demicttylus viridescens*), spring peeper (*Hyla crucifer*), gray treefrog (*Hyla versicolor*), green frog (*Rana clamitans melanota*) and bullfrog (*Rana catesbeiana*). Mole salamanders may be present in this area, but have not been documented. Diamondback terrapins commonly feed within Little Northwest Creek and may move up as far as Rattlesnake Creek. Mammals, reptiles and amphibians are those commonly found in Sag Harbor Village (Tables 3, 4 & 5).

- Two Kettles between Suffolk and Madison Street

These two hydrologically connected wetlands are unique in the Village. Both support numerous species of wetland sedges uncommon to the area (*Sparganium americanum* and two *Carex spp.*). Due to the fact that these wetlands are groundwater fed, water level fluctuations can be drastic within and between years. Therefore, observations made on any one year may not be applicable to latter years. The most important characteristic of this site is that it may support a population for the eastern spadefoot toad (*Scaphiopus holbrooki*) (Penny, pers. com.). However, there has not been a significant enough rainfall event in recent years to trigger emergence of this species (Ash, pers. com.).

- Maple Swamp feeding Otter Pond

What was once a healthy deciduous swamp has been heavily impacted by past trenching activity (vector control activities) which has significantly altered natural drainage patterns. Parallel and interconnecting ditches channelize all flow from south to north and generally preclude the natural water purification potential of this wooded wetland. Standing water is present in the trenches at various times of the year depending on season and weather patterns.

Construction and maintenance (recent clearing around some of the ditches was apparent during field work in summer 1994) of these ditches has unfortunately allowed common reed (Phragmites australis) to become well established. Fortunately, this species is concentrated in the center of the wetland where ditching has had the greatest impact. The dominant tree species is red maple (*Acer rubrum*). The understory consists of sweet pepperbush (*Clethra alnifolia*), shadbush (*Amelanchier canadensis*), chokeberry (*Aronia arbutifolia*), highbush blueberry (*Vaccinium corymbosum*) and swamp azalea (*Rhododendron viscosum*). The herbaceous layer consists of soft rush (*Juncus effusus*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*) and skunk cabbage (*Symplocarpus foetidus*) - among others.

The dense vegetation of this area provides substantial habitat for wildlife. Migratory birds frequent the area and can feed within the tree canopy and understory. Common larger mammals present include: white-tailed deer (*Odocoileus virginianus*), muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), grey squirrel (*Scirus carolinensis*), eastern cottontail (*Sylvagus floridanus*) and red fox (*Vulpes fulva*). A very high concentration of raccoon tracks indicate the suitability of this variably wet site to this species. Amphibians such as fowlers toad (*Bufo fowleri*), spring peeper (*Hyla crucifer*), gray tree frog (*Hyla versicolor*), green frog (*Rana clamitans melanota*) and bullfrog (*Rana catesbeiana*) utilize the system of trenches for breeding and habitat on a seasonal basis. Mole salamanders have not been observed at this site, but portions of the area may be suitable for these important species. Despite the presence of standing water, fish were not observed on the site in late summer (1994).

(c) Significant Coastal Fish and Wildlife Habitats

- Sag Harbor/Northwest Harbor

Location and Description

Sag Harbor and Northwest Harbor are adjoining bays on the north shore of the south fork of Long Island. The bays are located between North Haven and Cedar Point, in the Towns of East Hampton, Southampton, and Shelter Island, Suffolk County (7.5 Quadrangles: Greenport, NY, and Gardiners Island West, NY.). This area is approximately 3000 acres in size, consisting primarily of open water. However, the fish and wildlife habitat also includes the tidal wetlands associated with Little Northwest Creek, and exposed rocks located near the Sag Harbor Cove jetty. Water depths in most of Sag and Northwest Harbors range from six to 20 feet below mean low water. The bays are bordered by much undeveloped land, including Suffolk County park lands, and The Nature Conservancy's Mashomack Preserve. The NYSDEC owns approximately 190 acres of land surrounding Little Northwest Creek. The only major developments along the entire shoreline of these bays are the boating facilities in Sag Harbor Cove.

Fish and Wildlife Values

Sag Harbor and Northwest Harbor are generally representative of the Peconic Bays ecosystem, with broad expanses of moderately shallow water. This habitat type is unlike the very shallow bays on the south shore of Long Island or the relatively narrow bays on the north shore. Little Northwest Creek is an important component of this ecosystem, contributing to the biological productivity of the area.

Sag Harbor and Northwest Harbor are important to fish and wildlife throughout the year. Least tern (E), piping plover (T), and osprey (T) feed in the harbor area. Diamondback terrapin are scattered along the harbor coastline and tidal creeks, but the importance of the area to this species is not well documented. From November through March, Sag and Northwest Harbors support wintering waterfowl concentrations of county-level significance. Midwinter aerial surveys of waterfowl abundance for the ten-year period 1975-1984 indicate average concentrations of over 440 birds in the bays each year (1082 in peak year), including scaup, black duck, common goldeneye, bufflehead, red-breasted merganser, canvasback, mallard and Canada goose. During much of the same time period (December-early May), concentrations of harbor seals also occur in Sag Harbor and Northwest Harbor. Exposed rocks near the Sag Harbor Cove jetty provide an important "haulout" area, which seals use for resting and sunning. This location is one of about five major haulouts around Long Island, serving as a focal point for seals feeding in the Sag Harbor area. Northwest Harbor may also be an important feeding and resting habitat for juvenile Kemp's Ridley sea turtles (E) especially during the late summer and fall. More documentation is needed on the use of the area by this species as well as other sea turtle species.

Sag Harbor and Northwest Harbor are productive habitats for marine finfish and shellfish. This area is one of the most important bay scallop producing areas on Long Island, supporting a commercial shellfishery significant in the northeastern United States. Oysters are present in lesser numbers, providing limited recreational and commercial shellfishing opportunities. The bays serve as nursery and feeding areas (April-November, generally) for many estuarine species, such as weakfish, winter flounder and scup. Northwest Harbor sustains a commercial and recreational winter flounder fishery of county-wide significance. Fishing pressure in the area extends from spring through fall.

Impact Assessment

Any activity that would substantially degrade the water quality in Sag Harbor or Northwest Harbor would affect the biological productivity of this area. All species of fish and wildlife would be adversely affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity or sedimentation, and waste disposal. It is essential that high water quality be maintained in the area to protect the shellfishery. Efforts should be made to control discharges of sewage from recreational boats and upland sources. Thermal discharges, depending on the time of year, may have variable effects on the use of the area by marine species and wintering waterfowl. Installation and operation of water intakes would have significant impacts on juvenile (and adult, in some cases) fish concentrations, through impingement or entrainment. Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development (i.e., natural beach or salt marsh), may result in the loss of productive areas which support the fish and wildlife resources of Sag and Northwest Harbors. Undeveloped woodlands bordering Sag Harbor and Northwest Harbor are particularly important for maintaining the water quality and habitat value of the harbors, and should be preserved as a buffer zone. Any permanent alteration or human disturbance of the harbor seal haulout area, or obstruction of seal migrations, would adversely affect this species. Significant underwater noise, from dredging or other activities, could also preclude harbor seals from using this area.

(d) Additional Significant Coastal Fish and Wildlife Habitats

The following State-recognized significant coastal fish and wildlife habitats do not directly include the waters within the Sag Harbor local waterfront revitalization area. However, it is important to point out these areas, due to their proximity to Sag Harbor and the fact that wildlife do not recognize bureaucratic boundaries. In addition, both the New York State Department of State and the citizens of Sag Harbor Village feel that it is important to include these narratives in this section, due to their proximity to the Village.

- Northwest Creek

Location and Description

Northwest Creek is located south of Northwest Harbor, on the south fork of Long Island, in the Town of East Hampton, Suffolk County (7.5' Quadrangles: Greenport, NY, Gardiners Island West, NY, and Sag Harbor, NY). The fish and wildlife habitat consists of approximately 440 acres of tidal wetlands, of which about one-third is a shallow bay (less than four feet deep at mean low water) which connects to Northwest Harbor through a narrow inlet. This area displays a classic zonation of natural estuarine habitats, including intertidal creek banks, cordgrass marshes, salt marsh shrub communities, and transition areas into the surrounding oak-pine forests. The habitat area also includes approximately 25 acres of immediately adjacent upland forest areas. Northwest Creek is located within an undeveloped park land owned by Suffolk County. The only human development within the area is a residential area at Northwest Landing at the northeast end of the bay. A small amount of shoreline in this area has been bulkheaded for boat docking facilities.

Fish and Wildlife Values

Northwest Creek is one of only a few examples of relatively large, undisturbed, estuarine ecosystems on Long Island, outside of the major coastal bays on the south shore. The diversity and well-defined zonation of plant communities is especially rare in the region, as is its location within a watershed which is almost entirely undeveloped. Northwest Creek is utilized by a variety of fish and wildlife species, including several which are of special ecological and economic significance. At least two pairs of osprey (T) nested successfully in the area in 1984. The creek serves as an important feeding area for these and other osprey nesting in the vicinity, along with various species of herons, egrets, waterfowl and other wildlife. Diamondback terrapin (SC) nest on the beach bordering the creek. The tidal creek and salt marshes provide feeding areas and cover for the terrapins during their nesting period (April-July). Other probable or confirmed nesting bird species at Northwest Creek include green-backed heron, Canada goose, mallard, black duck, belted kingfisher, horned lark, red-winged blackbird, and sharp-tailed sparrow. The sand peninsula which separates Northwest Creek from the harbor may be suitable nesting habitat for least terns (E), common terns (T), or piping plovers. Least terns nested here in 1977. Northwest Creek is a highly productive area for marine finfish and shellfish. This area serves as a nursery and feeding area (from April-November, generally) for many estuarine fish species, including scup and winter flounder. Ribbed muscles and fiddler crabs are abundant in the tidal creek banks surrounding the bay. The Northwest Creek estuary and nearby portions of Northwest Harbor may be an important feeding and resting habitat for juvenile Kemp's Ridley sea turtles (E) especially during the late summer and fall. More documentation is needed on the use of the area by this species as well as other sea turtle species. Northwest Creek contributes significantly to the productive commercial and recreational fisheries in Northwest Harbor, and receives some local fishing pressure within the area as well. The area is locally important for waterfowl hunting, especially black duck and also for scaup and canvasback.

Impact Assessment

Any activity that would substantially degrade the water quality in Northwest Creek would adversely affect the biological productivity of this area. All species of fish and wildlife would be affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal. Alteration of tidal patterns in Northwest Creek (e.g., by modifying the inlet) could have major impacts on the fish and wildlife species present. Elimination of salt marsh and intertidal areas, through dredging, excavation, or filling, would result in a direct loss of valuable habitat area. Unregulated dredge spoil disposal in this area would be detrimental, but such activities may be designed to maintain or improve the habitat for certain species of wildlife. Diamondback terrapins inhabiting the beach are vulnerable to disturbance by humans from mid April through July. Significant pedestrian traffic or recreational vehicle use of the beach could easily eliminate the use of Northwest Creek as a breeding area and should be minimized during this period. Fencing and/or posting of the area could help protect this species. Establishment of a nesting tern population on the Northwest Creek barrier peninsula may be possible through habitat management activities. Nesting osprey inhabiting the area may be vulnerable to disturbance by humans from March through mid-August. Recreational activities (e.g., boat landing and picnicking) in areas near osprey nest sites should be minimized during this period. Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development, may result in the loss of productive areas which support the fish and wildlife resources of Northwest Creek. Undeveloped forest bordering the wetlands, including Barcelona Neck are particularly important for maintaining the water quality and habitat value of Northwest Creek and should be preserved as a buffer zone.

- Shelter Island - Harbor Bays Complex

This habitat narrative is part of the U.S. Fish and Wildlife Services Northeast Coastal Study Area Report. There is no official State designation for this area.

Location and Description

This habitat complex of lands and waters is located between the two eastern forks of Long Island, and includes portions of Shelter Island, Shelter Island Sound, Sag Harbor Bay, Northwest Harbor and Gardiner's Bay and a narrow section of coastline along the bay shoreline of the South Fork in the vicinity of Sag Harbor (7.5 Quadrangles: Sag Harbor, NY, Gardiners Island West, NY and Greenport, NY).

There are three principal habitat units within this complex: (1) Shelter Island (2) Open Bay Waters and, (3) South Fork Wetlands and Beaches. The general outline of this complex includes the entire southeastern peninsula of Shelter Island and the long narrow peninsula immediately north of it (Ram Island and Little Ram Island) as well as the intervening waters of Coecles Inlet. South of Shelter Island, the boundary encloses the waters of eastern Shelter

Island Sound and Sag Harbor Bay and an area of land to the east known as Barcelona Neck and the adjacent marshes of Northwest Creek. From there the boundary extends northwards along the eastern shoreline of Northwest Harbor, enclosing the areas of Alewife and Scoy Ponds, Cedar Pond and Cedar Point, and then cuts northwestwards across a section of Gardiners Bay before connecting with Reel Point on Shelter Island. The approximate linear dimensions of this complex are 8 miles (13 km) long in a northwest-southeast direction and 3 miles (5 km) wide in a southeast-northeast direction. Ownership over this complex is a mixed pattern of public waters and lands (mostly County). The Nature Conservancy preserve lands, and private lands.

Fish and Wildlife Values

This area, particularly the eastern section of Shelter Island, contains one of the highest nesting densities (mostly on natural snags) and numbers of osprey (*Pandion haliaetus*) in the region, second only to Gardiners Island; it is likely that this population will continue to expand under the present environmental conditions. The sand beaches of Mashomack Preserve, Cedar Point and others along the South Fork shoreline are regionally important, though seasonally variable, nesting beaches for piping plover (*Charadius melodus*), a U.S. Threatened species and least tern (*Sterna antillarum*). Sea-beach knotweed (*Polygonum glaucum*), a regionally rare plant, also occurs on beaches in this general area. The tidal marshes and freshwater wetlands are used extensively as feeding areas for colonial wading birds and wintering waterfowl, and American black ducks (*Anas rubripes*) nest here. The open bay waters and tidal marshes along the shoreline support large numbers of wintering waterfowl of regional significance, including common loon (*Gavia immer*), American black duck, mallard (*Anas platyrhynchos*), Canada goose (*Branta canadensis*), greater and lesser scaup (*Aythya marila* and *A. affinis*, respectively), common goldeneye (*Bucephala clangula*), red-breasted merganser (*Mergus serrator*), bufflehead (*Bucephala albeola)*, oldsquaw (*Clangula hyemalis*) and canvasback (*Aythya valisineria*).

Northern diamondback terrapins (*Malaclemys t. terrapin*) feed and nest in the tidal marshes and sandy creek banks throughout the area, particularly around Coecles Harbor. Recent evidence indicates that the waters and bay bottoms of the Peconic Bays, Gardiners Bay and other bodies of water in this area may serve as a significant summer feeding and nursery habitat for juvenile Kemp's Ridley (*Lepidochelys kempii*), a U.S. Endangered species and one of the rarest sea turtle species. Harbor seals (*Phoca vitulina)* use several rock areas in Sag Harbor Bay and Northwest Harbor as haulouts during winter and early spring, often in fairly large concentrations. The harbor areas and bays are also productive habitats for finfish and shellfish, and support a regionally significant commercial shellfishery for bay scallop (*Aequipecten irradians*) and, to a lesser extent, American oyster (*Crassostrea virginica*). These waters serve as important nursery and feeding areas for weakfish (*Cynoscion regalis*), winter flounder (*Pseudopleuronectes americanus*) and scup (*Stenotomus chrysops*). Scoy and Alewife Ponds and their associated steam systems are one of the few alewife (*Alosa pseudoharengus*) spawning areas on Long Island.

Impact Assessment

Residential development along the South Fork shoreline in this area poses a potential threat to water quality and elimination of shoreline habitat of regionally important fish, wildlife and plant species. The impressive and growing population of ospreys in the area attests to the present quality of their nesting and feeding habitat, which could, however, be reversed by large scale poorly planned or unregulated development or shoreline construction. Human disturbances to nesting beaches of piping plovers and terns, in the form of destruction of nests or eggs through trampling, off-road vehicles, boat landings, vandalism or pets, is a common problem of these sites. Vegetation succession at these sites can also lead to these sites no longer being suitable for nesting. Osprey are also affected by human disturbances during the nesting and fledgling periods.

Protection of water quality and significant aquatic habitats should be given the highest priority to ensure the continued high value of this area to wintering and migrating waterfowl, shellfish, spawning and juvenile fish, marine and estuarine turtles, nesting waterbirds and ospreys. Protective measures should include the full array of available mechanisms, including regulatory overview and enforcement of existing environmental laws and regulations, development and implementation of ecologically sound zoning and planning policies and practices, seeking opportunities to develop cooperative conservation and management agreements, conservation easements, land exchanges and acquisition. There are a number of opportunities and challenges here for various governmental agencies, conservation organizations, citizen groups and private landowners to work cooperatively in conserving and protecting the living resources of this area. Disturbances to nesting beach birds, wintering waterfowl and nesting ospreys should be minimized or eliminated by a variety of means, including protective fencing, area closures, posting, warden patrols and public education. Where predation by pets or feral animals, particularly on nesting beaches of terns and piping plovers, is determined to be a problem, predator removal practices should be implemented. Efforts should be made to identify and implement objectives and tasks outlined in the piping plover recovery plan. Conservation and management plans, including fire management, for certain rare plants, for example, sea-beach knotweed, and unique plant communities on Mashomack Preserve and Suffolk County park lands should be developed cooperatively to enhance, restore and protect such regionally important populations and natural communities on these lands.

(e) Locally-Important Estuarine and Freshwater Fish and Wildlife Habitats

- Sag Harbor Cove Complex

Location and Description

Sag Harbor Cove is actually a series of four water bodies, including Outer Sag Harbor Cove, Inner Sag Harbor Cove, Morris Cove and Upper Sag Harbor Cove, that are referred to as the Cove Complex. Each of the four basins is connected by narrow navigation channels; a strait from the northern end of the Cove connects these waters to Sag Harbor. The overall surface area of the Sag Harbor Cove Complex is approximately 0.7 square miles. The average depth within this area is approximately 4.9 feet. Average tidal amplitude is at least 1.7 feet and the average spring tide is closer to 3.0 feet. As noted in Section 2.3B(a), a limited salinity study was conducted in 1991 which indicated that the entire Cove Complex was nearly well-mixed and influenced strongly by coastal salinities. There was a slight longitudinal salinity gradient, with salinity decreasing mildly in an upstream direction (Najarian Associates and Cornell Cooperative Extension, 1992). Portions of the Cove Complex support extensive eelgrass (*Zostera marina*) beds which contribute significantly to productivity in surrounding waters and provide shelter for young bay scallops. Surface water quality for the entire Cove Complex is rated SA.

Fish and Wildlife Values

The series of basins comprising the Sag Harbor Cove Complex consists of some of the most productive waters within and adjacent to the Village of Sag Harbor. The intertidal fringe of the Cove Complex is surrounded by typical estuarine marsh species (*Spartina alterniflora and Spartina patens*) where structural fortification and dock facilities are absent. The width of the fringe is determined by the slope of the intertidal shoreline and the presence of upland disturbances and barriers. In the shallow intertidal waters starting at the marsh fringe there are extensive areas of highly productive mudflats and sand bars. These areas are colonized by numerous species of algae including: bladder rack (*Fucus vesiculosus*), knotted wrack (*Ascophyllum nodosum*), and Irish moss (*Chondorus crispus*). Sea Lettuce (*Ulva lactuca*), which is common throughout the Cove Complex, is indicative of high nutrient conditions. Deeper waters within the Cove Complex support very dense beds of eelgrass which greatly increases primary productivity. Bay scallops (*Aequipecten irradians*), which are often abundant in the Cove Complex, utilize this habitat. Hard clams (*Mercenaria mercenaria*) can be found on both intertidal and sub tidal bottom lands. A set of oysters (*Crassostrea virginica*) has recently appeared in this system (J. Semlear, 1994). It is not clear whether these animals will survive to achieve harvestable size.

In a 1992 study conducted by the Okeanos Ocean Research Foundation, large numbers of diamondback terrapins (*Malaclemys terrapin terrapin*) were observed throughout the Cove

Complex (Morreale, 1992). This area had a smaller apparent population then other locations studied, but was still regionally significant.

Weakfish (*Cynoscion regalis*), striped bass (*Morone saxatilis*), winter flounder (*Pseudolpleuronectes americanus*), and porgy (*Stenotomus chrysops*) have all been caught in these waters. Late summer shallow seining in the area in 1994 indicated the presence of large numbers of locally-significant finfish species including: bay anchovy (*Anchoa mitchilli*), menhaden (*Brevoortia tyrannus*), Atlantic silverside (*Menidia menidia*), snapper bluefish (*Pomatomus saitatrix*), and winter flounder. Other species caught during this seining include: sheepshead minnow (*Cyprinodon variegatus*), mummichog (*Fundulus heteroclitus*), killifish (*Fundulus majalis*), three-spined stickleback (*Gasterosteus aculeatus*), naked goby (*Gobiosoma bosci*), Atlantic needle fish (*Strongylura marina*), and bay pipefish (*Syngnathus leptophynchus*).

Impact Assessment

Due to the prominent position of this system and the fact this area supports a significant shellfishery, water quality in the Sag Harbor Cove Complex should be of utmost concern to citizens of Sag Harbor Village. In addition to the commercial fishing activity, there is also considerable recreational boating and sightseeing occurring in this area. Any activities that degrade the environmental quality or aesthetics of the shoreline should be avoided.

One major cause of degraded water quality in the Sag Harbor Cove Complex is input of untreated roadway runoff. For example, significant quantities of stormwater runoff enter the Outer Cove from the northern end of County Route 60 (Noyack Long Beach Road). At this location, there are at least four points where runoff is channeled directly into the waters of the Cove. These direct runoff points should be addressed by the Suffolk County Department of Public Works. In addition, there is a major source of road runoff entering Paynes Creek from the residential area located west of Noyack Road (County Route 38). This source of contamination is being addressed by Southampton Town.

The southeastern portion of Upper Sag Harbor Cove is another problem area. This area has been closed year-round to shellfishing by NYSDEC due to consistent failure to meet the standards for total and fecal coliform bacteria. The causes of the deteriorated water quality in this area are not fully clear, but the discharge from Otter Pond, road runoff, cesspools and marinas are highly suspect and considered the primary factors. Otter Pond is tidally-connected to Upper Sag Harbor Cove by a small outlet stream. Otter Pond is known to support a large population of waterfowl, which is a significant contributor of fecal matter to surface waters. The pond has also lost a significant extent of its fringing wetlands and directly intercepts a large amount of stormwater runoff. The shoreline at the southeastern end of the Upper Cove is also closely surrounded by older homes which may be adding to the water quality problem in this area due to inadequately treated septic wastes. Poor mixing at the eastern end of the Cove Complex may also be a factor in elevated coliform levels.

Every effort should be made to improve the water quality of Otter Pond and restore the pond to a preimpacted state. Restoring the fringing wetlands and discouraging the feeding of waterfowl in this area would be helpful in mitigating water quality problems here. The tidal outlet leading from the pond to the Upper Cove should also be fully restored to improve flushing in this area.

Another reason for degraded water quality in the Sag Harbor Cove Complex has been the loss of most of the original wetland fringe from the perimeter of this area. Construction of shoreline stabilization structures and docks, and the deposition of dredge spoils, has incrementally reduced the total salt marsh area in this system and prevented the inland retreat of wetland habitats as sea level rises. One way of addressing this deficit would be to restore the tidal wetlands along Noyack Long Beach Road. Most of the wetlands have been lost here as a result of dredge spoil disposal. Working with Southampton Town, much of this area could be restored to yield a net gain in wetland area in the Cove Complex. This increase would help to improve water quality and provide habitat for young finfish and shellfish species.

The number of new residential docks on the cove should be kept to a minimum considering the amount of shoreline that has already been impacted by human activities. Residents should be encouraged to consider less harmful alternatives to traditional docking structures. The use of linear mooring systems, for example, or similar alternatives should be encouraged over permanent structures. In addition, bulkheading and other types of shoreline hardening should be discouraged.

- John Street Wetland

Location and Description

The John Street Pond is an isolated intertidal pond and associated wetland fringe that is connected to Upper Sag Harbor Cove by a culvert running under John Street. Freshwater drains from the southwestern portion of the area towards the culvert at the northeastern corner of the pond. The pond is very shallow, with a sandy bottom overlain by pockets of organic matter. Tidal fluctuation is minimal due to restrictions caused by the diameter and elevation of the culvert. Vegetation surrounding the pond is typical of disturbed estuarine marsh; common reed (*Phragmites australis*) forms a dense stand at the upland edge of otherwise native intertidal species. The presence of the reeds forms an effective barrier around the entire pond system which is located in the middle of a residential neighborhood. This area acts as "oasis" in the center of this otherwise heavily populated area.

Fish and Wildlife Values

Numerous species of nesting coastal birds have been observed at this site. The extremely shallow water is ideal for wading birds to feed. Fish species using this pond include:

sheepshead minnow (*Cyprinodon variegatus*), mummichog (*Fundulus heteroclitus*) and killifish (*Fundulus majalis*). There is also evidence of numerous shellfish species including: oyster (*Crassostrea virginica*), ribbed mussel (*Modiolus demissus*), soft-shelled clam (*Mya arenaria*) and mud snail (*Nassarius absoletus*). Songbirds are likely to feed and nest within the dense plant cover surrounding the pond.

Impact Assessment

Clearing of vegetation, especially trees adjacent to and within this area, could drastically reduce the quality of wildlife habitat. At this time, the tree canopy and understory plants effectively isolate this area from outside disturbance and make it suitable as wildlife habitat. Input of additional road runoff should be controlled. That which is already entering the area has drastically altered plant species composition and reduced wildlife values. Maintenance of the culvert under John Street is essential to the health of this system. Without this connection to Upper Sag Harbor Cove, this area would stagnate and cease to be productive.

- Otter Pond and Maple Swamp

Location and Description

Otter Pond is a shallow intertidal pond of approximately four acres located within Mashashimuet Park. The Park consists of a total of 11.8 acres and is owned by the Sage Foundation. Otter Pond receives saltwater from a tidal creek originating in Sag Harbor Cove which flows under Main Street (CR 79). Due to restrictions caused by stones and debris at the pond's connection to the creek, tidal fluctuation for the Pond is only about one foot, while the tidal amplitude in Upper Sag Harbor Cove is approximately 1.7 feet. Underwater lands within the Pond are owned by Southampton Town; the Village has no jurisdiction. Freshwater enters the eastern end of the pond through a culvert under Jermain Street that drains a large Maple swamp west of Joel's Lane.

The swamp, which was once a healthy deciduous swamp, has been heavily impacted by past trenching activity (vector control activities) which has significantly altered natural drainage patterns. Parallel and interconnecting ditches channelize all flow from south to north and generally preclude the natural water purification potential of this wooded wetland. Standing water is present in the trenches at various times of the year depending on season and weather patterns.

Fish and Wildlife Values

Otter Pond is a very shallow water body characterized by high nutrient loads and near eutrophic conditions. At one time the pond was bordered by a healthy fringe of estuarine wetland. Today the majority of the pond perimeter is vegetated by turf grasses. Extensive growth of sea lettuce (*Ulva lactuca*) is indicative of high-nutrient conditions. Much of the

bottom of this water body is covered by a thick layer of organic sediment which contributes to nutrient availability and is indicative of high primary production and low decomposition rates. The Pond supports large numbers of waterfowl throughout the year. Peking ducks, mallards and Canada goose can be found here at any time of year. This area also supports significant wintering waterfowl concentrations. The most recent (1994) New York State waterfowl counts for Otter Pond include Canada goose (*Branta canadensis*), American black duck (*Anas rubripes*), canvasback (*Aythya valisineria*) and almost 200 mallard (*Anas platyrhynchos*). Fin and shellfish species present are those typical of local estuarine water bodies. Late summer (1994) seining in Otter Pond yielded sheepshead minnow (*Cyprinodon variegatus*), mummichog (*Fundulus heteroclitus*), killifish (*Fundulus majalis*), three-spined stickleback (*Gasterosteus aculeatus*) and naked goby (*Gobiosoma bosci*). In the past, striped bass (*Morone saxatilis*) have been caught in the Pond. Diamondback terrapins (*Malaclemys terrapin*) have utilized this area for feeding.

The Maple Swamp has a dense stand of vegetation which provides substantial cover for large and small mammals. Migratory birds frequent the area and can feed within the tree canopy and understory. Common larger mammals such as white-tailed deer (*Odocoileus virginianus*), muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), grey squirrel (*Scirus carolinensis*), eastern cottontail (*Sylvagus floridanus*) and red fox (*Vulpes fulva*) utilize this area. A very high concentration of raccoon tracks indicate the suitability of this site to this species. The occasional standing water in the trenches most certainly provides an ideal habitat. Common amphibians utilize the system of trenches for breeding and feeding habitat (Table 5). To date, mole salamanders have not been observed at this site but portions of the area may be suitable. Fish were not observed on the site in late summer (1994).

Construction and maintenance (recent clearing around some of the ditches was apparent during field work in summer 1994) of these ditches has unfortunately allowed common reed (*Phragmites australis*) to become well established. Fortunately this species is concentrated in the center of the wetland where ditching has had the greatest impact. The dominant tree species is red maple (*Acer rubrum*). The understory consists of sweet pepperbush (*Clethra alnifolia*), shadbush (*Amelanchier canadensis*), chokeberry (*Aronia arbutifolia*), highbush blueberry (*Vaccinium corymbosum*) and swamp azalea (*Rhododendron viscosum*). The herbaceous layer consists of soft rush (*Juncus effusus*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*) and skunk cabbage (*Symplocarpus foetidus*) among others.

Impact Assessment

There is little that can be done to Otter Pond that has not been done already. Reducing organic and nutrient inputs could help to revitalize this near-eutrophic water body and return it to something resembling its former state. However, any serious effort to restore this site would have to address the issue of public access (involving recreation and feeding of waterfowl).

The Maple Swamp has already been significantly impacted by trenching. As a result, surficial drainage patterns have been drastically altered. In addition, an upstream input of nutrients and that from road runoff has already favored the invasion of a portion of the area by the common reed. Every attempt should be made to prevent stormwater from entering this system. Existing trenches should be blocked and "natural" hydrology restored. The dumping of debris and yard waste along Joel's Lane should be discouraged.

- Little Northwest Creek

Location and Description

Little Northwest Creek is a small tributary feeding into Sag Harbor Bay. This tidal creek is the dividing line between Sag Harbor Village (Southampton Town) and East Hampton Town. The western bank of this water body forms the eastern boundary of the Village. The tidally-influenced portion of the creek is surrounded by approximately 190 acres of State-owned wetlands and buffering uplands managed by the NYSDEC. The intertidal portions of the marsh consist of undisturbed high marsh with salt hay grass (*Spartina patens*), spike grass (*Distichlis spicata*), black grass (*Juncus gerardii*), perennial glasswort (*Salicornia virginica*), sea lavender (*Limonium carolinianum*), perennial salt marsh aster (*Aster tenuifolius*) and seaside gerardia (*Agalinis maritima*) and a low marsh fringe with cordgrass (*Spartina alterniflora*). Both of these habitats are colonized by typical estuarine species of molluscs and arthropods (Table 7). The upland fringe is dominated by a narrow to wide stand of common reed (*Phragmites australis*). Reeds are more extensive in the upper reaches of the tidally influenced portion of the creek. Surface water quality for the tidal portion of the Little Northwest Creek is rated as SC. The upper reaches of Little Northwest Creek are connected to Rattlesnake Creek. This entire area comprises an expansive maple swamp of a size and quality unique to the Village. Surface water quality for this system is rated as B.

Fish and Wildlife Values

Tidal portions of the creek support most of the commonly occurring species of estuarine fish, molluscs and arthropods found in the region (Tables 6 & 7). The headwaters of Little Northwest Creek and Rattlesnake Creek are surrounded by an expansive Maple Swamp. These wetlands support the largest population of spotted turtles (*Clemmys guttata*) in the Village (Penny, pers. com.). Mud turtles (*Kinosternum subrubrum*) would be expected in this area, but they have not been observed to date. Commonly found amphibians include: fowlers toad (*Bufo fowleri*), eastern newt (*Demicttylus viridescens*), spring peeper (*Hyla crucifer*), gray treefrog (*Hyla versicolor*), green frog (*Rana clamitans melanota*), and bullfrog (*Rana catesbeiana*). Mole salamanders may be present in this area, but have not been documented. Northern diamondback terrapin (*Malaclemys terrapin terrapin*) feed within Little Northwest Creek and may be found in Rattlesnake Creek. Mammals and reptiles occurring in this area are those commonly found in Sag Harbor Village (Tables 3 and 4).

Impact Assessment

Any activities that would alter hydrology (surficial and groundwater) in this area would drastically alter the nature of this wetland/creek system. Actions that restrict tidal flushing would degrade the lower reaches of the creek. In the headwater region, clearing or alteration of vegetation or change of grade would disrupt current water movement to the creek. Input of road derived stormwater flow could negatively affect water as well as nutrient budgets for this habitat possibly making the area unsuitable for existing wildlife and encouraging the spread of nonnative and invasive plant species. Considerable input of yard waste (organic matter) from surrounding private properties should be prevented to reduce the chance of significantly altering the carbon cycle for this wetland system. Property owners along the western edge of the system commonly discard leaves, tree limbs and other organic materials onto this property.

- Round Pond and Fore and Aft Pond

Location and Description

Round Pond is an approximately seven-acre freshwater pond lying within the northern end of the Long Pond Green Belt system designated by the Nature Conservancy. Only the northern portion of the pond lies within Sag Harbor Village, at the southern end of Joel's Lane. The green belt, which runs from Mashashimuet Park in the north to Sagaponack Lake and the Atlantic Ocean in the south, is a wildlife and open space corridor which has received special attention from the Nature Conservancy and Southampton Town. This entire area is a relatively undisturbed system of ponds, wetlands, open space and surrounding woodlands.

There is some development around the perimeter of Round Pond, with little structural fortification except for that at the end of Middle Line Highway. Seven houses have been built in close proximity to the pond, three of which have lawns extending down to the shoreline. Several more houses are set back further from the shoreline. The west shoreline of the pond is natural and undisturbed. This pond and the associated coastal plain pond shore species surrounding its shoreline are unique within the Village of Sag Harbor and deserve special protection. Surface water quality for this water body is rated as C. The quality of the coastal plain pond shore habitat at the site has been rated as "B" by the Natural Heritage Program. An "A" is the highest rating.

Fore and Aft Pond is a one acre wetland pond directly west of Round Pond. This wetland pond is hydrologically (via groundwater) connected to Round Pond. This area is fairly well buffered by native vegetation and has a coastal plain pond shore habitat and one State rare species identified by the New York State Natural Heritage Program. Water quality for this pond has not been classified, but the coastal plain pond shore habitat present on the site was given a rating of "BC" from the Natural Heritage Program. An "A" is the highest qualitative rating that can be received.

Fish and Wildlife Values

This pond/wetland complex and the Fore and Aft Pond system adjacent to it supports the most significant mole salamander population within the Village. Spotted salamander (*Ambystoma maculatum*), marbled salamander (*Ambystoma opacum*) and the tiger salamander (*Ambystoma tigrinum*) have all been found here (Penny, pers. com.). This may be the only location in the Village that supports these species. Commonly found amphibians include: fowlers toad (*Bufo fowleri*), eastern newt (*Demicttylus viridescens*), spring peeper (*Hyla crucifer*), gray treefrog (*Hyla versicolor*), green frog (*Rana clamitans melanota*), and bullfrog (*Rana catesbeiana*). Painted turtles are found in this system and there may also be spotted turtles (*Clemmys guttata*). During the early 1990's, a pair of otters was observed in the pond, but they have not been seen recently. Fish species observed in past surveys include: largemouth bass (*Micropterus salmoides*), pumpkinseed (*Lepomis gibbosus*), bluegill (*Lepomis macrochirus*) and common pickerel (*Esox sp.*) (Guthrie, pers. com.). Mammals and reptiles are those typical for the Village (Tables 3 and 4). Large populations of ducks and swans often inhabit this pond and are thought to reduce water quality through the input of organic waste.

The following significant upland and coastal plain pond shore species have been identified as being at Round Pond by the New York Heritage Program: pine barren gerardia (*Agalinis vigata*), white milkweed (*Asclepias variegata*), silver aster (*Aster concolor*), rose coreopsis (*Coreopsis rosea*), knotted spikerush (*Eleocharis equisetoides*), creeping St. John's wort (*Hypericum adpressum*), carolina redroot (*Lachnanthes caroliana*), velvety lespedeza (*Lespedeza stuevei*), ludwigia (*Lugwigia sphaerocarpa*), crested fringed orchis (*Platanthera cirstata*) and wafer-ash (*Ptelea trifoliata*). Fore and Aft Pond is fairly well buffered by native vegetation and supports the Heritage Program recognized, long-beaked bald-rush (*Psilocarya scirpoides*).

Impact Assessment

The habitat in and around Round Pond and Fore and Aft Pond is some of the most significant to wildlife in Sag Harbor Village. Disturbance of vegetation, grade or hydrology in any way could drastically affect this fragile system. Fore and Aft Pond is especially susceptible to future land use decisions. An increase or decrease in water input would negatively impact the existing coastal plain pond shore habitat. Input of nutrients derived from surface water runoff or groundwater movement could drastically affect species composition and favor invasive species such as the common reed (*Phragmites australis*) over native species.

- Ligonee Brook

Location and Description

Ligonee Brook is a small freshwater brook running from east to west draining into the southeastern end of Sag Harbor Cove. The Sag Harbor Village boundary is along the entire

length of the Brook. For classification purposes, this creek is conveniently divided into two reaches: from the mouth to Brick Kiln Road, and from Brick Kiln Road to the source. West of Brick Kiln Road in the lower reach of the Brook there is some salt water influence; east of the road in the upper reaches there is little if any salt influence. The lower or estuarine portion of Ligonee Brook is that considered in this section.

The entire length of the lower intertidal portion of Ligonee Brook is bordered by typical estuarine marsh vegetation with pockets of common reed where upland disturbance has taken place. Just west of Brick Kiln Road, there is occasional tidal influence, but the species composition is more representative of a freshwater-dominated wetland with a small pocket of maple swamp north of the Creek adjacent to Brick Kiln Road. Water quality in the estuarine portions of the Creek is rated as SC.

Fish and Wildlife Values

The entire length of the lower intertidal portion of Ligonee Brook is bordered by typical estuarine marsh vegetation with pockets of common reed where upland disturbance has taken place. Just west of Brick Kiln Road, there is occasional tidal influence, but the species composition is more representative of a freshwater-dominated wetland with a small pocket of maple swamp north of the Creek adjacent to Brick Kiln Road, unique to this area of the Village. The mouth of the Brook supports common estuarine species of fish and shellfish found in Tables 6 and 7. In the estuarine portion of the Brook, amphibians are restricted to the upper reach near Brick Kiln Road. Late summer (1994) sampling in the Brook indicated only one fish species, killifish (*Fundulus majalis*). Alewives (*Alosa pseudoharengus*) were found in the area in the past, but have not been observed recently.

The freshwater portion of Ligonee Brook, east of Brick Kiln Road, comprises a significant wildlife corridor along the southern boundary of the Village. Dense plant cover throughout most of the area provides shelter for common species of migratory birds, small and large mammals, common reptiles and amphibians. Mammals, reptiles and amphibians are those commonly found throughout the Village (Tables 3, 4 and 5). At one time, alewife (*Alosa pseudoharengus*) moved up the Brook as far as Brick Kiln Road, but they have not been seen for many years.

Impact Assessment

Ligonee Brook is fairly well vegetated and screened from surrounding development. However, clearing of any type would significantly reduce the value of this important wildlife corridor. Increase in the quantity of stormwater runoff input to the brook would greatly reduce wildlife habitat. At this time, there are at least two major points of stormwater influx: Brick Kiln Road and Main Street. Both of these sources should be mitigated in some way to increase water quality along the brook. Berming the edge of the road and allowing the water to pass over the Brook, before it leaves the road surface, would preclude the discharge of raw

stormwater to Ligonee Brook. At that point, the water can either be allowed to flow overland away from the road or be diverted to a dry well or small infiltration basin. Either option would be helpful in this situation.

TABLE 1

NEW YORK STATE WATER QUALITY CLASSIFICATIONS
DEFINED ACCORDING TO BEST USAGE

Freshwater Classification	**Best Usage**
AA	Source of water supply for drinking, culinary or food processing purposes and any other usages.
A	Source of water supply for drinking, culinary or food processing purposes and any other usages.
B	Primary contact recreation and any other use except as a source of water supply, for drinking, culinary or food processing purposes.
C	The waters are suitable for fishing and fish propagation. The water quality shall be suitable for primary and secondary contact recreation even though other factors may limit the use for that purpose.
D	The waters are suitable for fishing. The water quality shall be suitable for secondary contact recreation even though other factors may limit the use for that purpose. Due to such natural conditions as intermittent flow, water conditions not conducive to propagation of game fishery, or stream bed conditions, the waters will not support fish propagation.
Saline Classifications	**Best Usage**
SA	The waters shall be suitable for shellfishing for market purposes and primary and secondary contact recreation.
SB	The waters shall be suitable for primary and secondary contact recreation and any other use except for the taking of shellfish for market purposes.
SC	The waters are suitable for fishing and fish propagation. The waters shall be suitable for primary and secondary contact recreation even though other factors may limit the use for that purpose.
SD	All waters not primarily for recreational purposes, shellfish culture or the development of fish life, and because of natural or man-made conditions cannot meet the requirements of these uses.
Special Classification	**Best Usage**
I	The waters shall be suitable for secondary contact recreation and any other usage except for primary contact recreation and shellfishing for market purposes.

Definitions:

- **Best usage of waters** as specified for each class shall be those used as determined by the commissioner and the administrator in accordance with the considerations prescribed by the Environmental Conservation Law and the Federal Water Pollution Control Act of 1972.
- **Primary contact recreation** shall mean recreational activities where the human body may come in direct contact with raw water to the point of complete submergence. Such uses include swimming, diving, water skiing, skin diving and surfing.
- **Secondary contact recreation** shall mean recreational activities where contact with the water is minimal and where ingestion of the water is not probable. Such uses include, but are not limited to, fishing and boating.

TABLE 2

CLASSIFICATIONS ASSIGNED TO SAG HARBOR WATER BODIES

WATER BODY	CLASSIFICATION
Sag Harbor Bay	SA
Sag Harbor Cove Complex (All of cove southwest of North Haven/State Route 114 Bridge)	SA
Upper Sag Harbor Cove	SA
Morris Cove	SA
Ligonee Brook --	
Mouth to Brick Kiln Road	SC
From Brick Kiln Road to source	C
Otter Pond --	SC
Connecting water/Tributary of Upper Sag Harbor Cove	SD
John Street Pond*	--
Round Pond	C
Little Northwest Creek --	
Tidal portion	SC
Freshwater portion	B
Sub tributary/Rattlesnake Creek	B

*Note: The surface waters of John Street Pond are currently unclassified by NYSDEC. It is uncertain whether these waters will be classified in the future.

Sources: 6NYCRR, Chapter 10, Article 16
Jacobson, NYSDEC, February 10, 1995

TABLE 3

LARGE AND SMALL MAMMALS FOUND IN SAG HARBOR VILLAGE AND SURROUNDING AREAS

LARGE

opossum (*Didelphis marsupialis*)
white-tailed deer (*Odocoileus virginianus*)
muskrat (*Ondatra zibethicus*)
harbor seal (*Phoca vitulina*)
raccoon (*Procyon lotor*)
grey squirrel (*Scirus carolinensis*)
eastern cottontail (*Sylvagus floridanus*)
red fox (*Vulpes fulva*)

SMALL

short-tailed shrew (*Blarina brevicauda*)
meadow vole (*Microtus icus*)
house mouse (*Mus musculus*)
little brown bat (*Myotis lucifugus*)
white-footed mouse (*Peromyscus leucopus*)
pine mouse (*Pitymys pinetorum*)
norway rat (*Rattus norvegicus*)
eastern mole (*Scalopus aquaticus*)
masked shrew (*Sorex cinereus*)
eastern chipmunk (*Tamias striatus*)

TABLE 4

COMMON SPECIES OF REPTILES FOUND IN SAG HARBOR VILLAGE AND SURROUNDING WATERS

snapping turtle (*Chelydra serpentina*)
painted turtle (*Chrysemys picta picta*)
northern black racer (*Coluber constrictor constrictor*)
northern ringneck snake (*Diadophis punctatus edwardsi*)
eastern milk snake (*Lampropeltis doliata triangulum*)
northern diamondback terrapin (*Malaclemys terrapin terrapin*)
little brown snake (*Storeria dekayi dekayi*)
box turtle (*Terrapene carolina carolina*)
eastern ribbon snake (*Thamnophis sauritus sauritus*)
eastern garter snake (*Thamnophis sirtalis sirtalis*)

TABLE 5

COMMON AND RARE AMPHIBIANS FOUND IN SAG HARBOR VILLAGE

spotted salamander (*Ambystoma maculatum*) (rare)
marbled salamander (*Ambystoma opacum*) (rare)
tiger salamander (*Ambystoma tigrinum*) (rare)
fowlers toad (*Bufo fowleri*)
eastern newt (*Demicttylus viridescens*)
spring peeper (*Hyla crucifer*)
gray treefrog (*Hyla versicolor*)
green frog (*Rana clamitans melanota*)
bullfrog (*Rana catesbeiana*)
eastern spadefoot (*Scaphiopus holbrooki*)

TABLE 6

FINFISH COMMONLY FOUND IN THE WATERS SURROUNDING SAG HARBOR

blueback herring (*Alosa aestivalis*)
alewife (*Alosa pseudoharengus*)
American shad (*Alosa sapidissima*)
American sandlance (*Ammodytes americanus*)
bay anchovy (*Anchoa mitchilli*)
American eel (*Anguilla rostrata*)
menhaden (*Brevoortia tyrannus*)
weakfish (*Cynoscion regalis*)
sheepshead minnow (*Cyprinodon variegatus*)
mummichog (*Fundulus heteroclitus*)
killifish (*Fundulus majalis*)
three-spined stickleback (*Gasterasteus asculeatus*)
naked goby (*Gobiosoma bosci*)
Atlantic silverside (*Menidia menidia*)
striped bass (*Morone saxatilis*)
rainbow smelt (*Osmerus mordax*)
summer flounder, fluke (*Paralichthys dentatus*)
bluefish (*Pomatomus saltatrix*)
winter flounder (*Pseudopleuronectes americanus*
porgy (*Stenotomus chrysops*)
Atlantic needlefish (*Strongylura marina*)
bay pipefish (*Syngnathus leptorhynchus*)
blackfish, tautog (*Tautoga onitis*)

TABLE 7

MOLLUSCS AND ARTHROPODS COMMONLY FOUND IN THE WATERS SURROUNDING SAG HARBOR

bay scallop (*Aequipecten irradians*)
blue crab (*Callinectes sapidus*)
rock crab (*Cancer irroratus*)
green crab (*Carcinus maenas*)
American oyster (*Crassostrea virginica*)
slipper shell (*Crepidula fornicata.*)
mud crab (*Eurypanopeus depressus*)
American lobster (*Homarus americanus*)
spider crab (*Libinia spp.*)
horseshoe crab (*Limulus polyphemus*)
common periwinkle (*Littorina littorea*)
hard-shelled clam or quahog (*Mercenaria mercenaria*)
ribbed mussel (*Modiolus demissus*)
soft-shelled clam (*Mya arenaria*)
blue mussel (*Mytilis edulis*)
mud snail (*Nassarius obsoletus*)
hermit crab (*Pagurus longicarpus*)
oyster drill (*Urosalpinx cinerea*)

E. FLOODING AND EROSION

(a) Natural Protective Features and Man-made Shoreline Conditions

Natural Protective Features

Protection from coastal erosion is provided by a variety of natural shoreline features. In the Village of Sag Harbor, these features primarily comprise near shore areas, beaches, and vegetated marshes. Although there are notable bluffs at Barcelona Point and dune formations in the vicinity of Little Northwest Creek to the east of the Village, these features are virtually absent from the Village's shoreline.

Near shore areas, beaches, and vegetated marshes protect the adjacent upland in the Village from coastal erosion by dissipating the energy of incident waves. In general, maximum protection is provided by gradually sloping near shore areas and wider, more gently sloped beaches; wave impacts are more forceful, and thus the degree of erosion susceptibility is greater, if these features have a steeper gradient. Wide, thickly vegetated marshes also provide the greatest level of protection against waves.

The large section of shoreline containing bluffs on Barcelona Neck, less than one mile to the northeast of the Village, serves an important function in protecting the Village shoreline from coastal erosion (particularly along the beachfront to the east of the breakwater) by providing a continuous natural supply of sand in the littoral drift system.

See subsection (b), below for further discussion of the role of these bluffs with respect to the Village's shoreline.

Man-made Shoreline Conditions

A large portion of the shore front in the Village of Sag Harbor has been developed with structural protection devices (see Figure 9; this *Figure 9* appears in the Village Harbor Management Plan as "Figure 12 - WATER USE PLAN"). The general design and function of the primary categories of structures found in the Village is described as follows:

- Bulkheads - These wall-like structures are usually composed of timber, but are sometimes constructed with steel, concrete, masonry, or other materials. Bulkheads are built along the shoreline and are intended primarily to retain upland material, but also provide a barrier against shoreline recession. Bulkheads are the most common coastal structures in the Village, particularly on the commercial properties between the breakwater and *Ship Ashore Marina*. Bulkheads are also present on numerous residential properties throughout the Village.

- Revetments - These devices are also built along the shoreline, but are composed of heavy rocks or concrete rubble that is intended strictly to provide "armoring" for protection against wave attack. Revetments are also fairly common in the Village, being found beneath the North Haven/Route 114 Bridge, at Sag Harbor Cove West Marina, between Haven's Beach and Beach Road, and at several other locations.

- Breakwaters - These structures can consist of uncemented rocks or rubble, concrete, and a variety of other materials. Breakwaters are oriented perpendicular to the primary path of travel of waves, and are designed mainly to provide a sheltered harbor area on the lee side by intercepting or dissipating incoming wave energy.

- Groins - These structures, which are usually composed of rock or concrete rubble, but can also be constructed of timber, are installed perpendicular to the shoreline for the purpose of trapping sediment moving near shore in the littoral drift system. Groins are not present in the Village, except the finger of concrete and masonry rubble projecting perpendicular to the shore at the Cor Maria property, which functions somewhat like a groin. Additionally, the breakwater also acts as a groin, intercepting sand carried in the westward-flowing littoral drift system at this location.

The Village originally consisted of a broad low-lying expanse of meadow and marsh land, extending in some areas a considerable distance south from the shoreline, surrounded by a series of low hills further back from the water. Today, much of the lower, or northerly

portion of the Village, consists of filled marshland with some vestigial wetland remaining, particularly to the west of the North Haven/Route 114 Bridge. The development that has occurred on these filled lands comprises a large portion of the area in the Village that is susceptible to coastal flooding - see further discussion in subsection (b), below.

(b) Flood-Prone and Erosion Hazard Areas

Flood-Prone Areas

The Village contains flood zones that have been designated by the Federal Emergency Management Agency (FEMA). There are several categories of flood zones, as depicted on FEMA's Flood Insurance Rate Maps, based on the degree of susceptibility to flood damage. Four flood hazard zones exist within the Village, as shown on Figure 7 and summarized below:

- V Zone (i.e., high velocity zone, also called the coastal high hazard area) - that area of land which would be subject to breaking waves of three feet or greater height, in addition to still water flooding, during the 100-year storm event;

- A Zone (also called the area of special flood hazard) - that area of land which would primarily experience still water flooding, without significant wave activity, during the 100-year storm;

- B Zone - areas between the limits of the 100-year flood and the 500-year flood; or certain areas subject to 100-year flooding with average water depths of less than one foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood; and

- C Zone - areas of minimal flooding.

Figure 7 depicts the 100-year floodplain (i.e., V and A zones), which encompasses all or a portion of every waterfront property in the Village. The width of the floodplain depends on topography. To the east of Milton Avenue, the floodplain lies immediately adjacent to the beach due to the relatively steep gradient of the adjacent upland. Between Milton Avenue and the breakwater, where the land is flatter, the floodplain extends further inland (especially at Haven's Beach). The low-lying lands to the west of Main Street have the most extensive areas in the 100-year floodplain, especially on the Redwood and Morris Cove peninsulas and the westerly portion of the Village Business District.

The V zone is located entirely to the east of the breakwater, and generally occurs as a narrow band along the shore. At Haven's Beach, the V zone extends inland several hundred feet, due to the relatively level contour of the land here. A zones extend landward

of the narrow V zone to the east of the breakwater, and occupy the entire 100-year floodplain in the inner harbor area.

Areas of B zone, which occur between the 100-year and 500-year floodplain boundaries, are also present within the Village. B zones extend inland from the A zones.

Most of the upland in the Village is designated as C zone. These areas of higher ground have minimal potential for flooding.

Erosion Hazard Areas

When the supply of sediment naturally brought to an area by longshore transport is blocked by a barrier, such as a groin, jetty or similar structure, the beaches on the down drift side of the structure will tend to erode since they no longer receive sediment nourishment from up drift beaches. The littoral currents associated with the eroding beach may become "starved" in the sense that they are not receiving an adequate supply of depositing materials derived from upstream beaches.

The directions of near shore sediment transport vary due to the configuration of the shoreline and the predominant direction of incoming waves. Although qualitative and anecdotal information suggests that the rates of longshore drift vary considerably throughout the Peconic Estuary system, no detailed studies have been made to determine the rates at various locations.

Mapped observations indicate that the Village of Sag Harbor lies between two headlands: the North Haven peninsula and Barcelona Neck. In both instances the longshore transport directions are split around the projecting headland, with bluffs at these headlands contributing sediment to the littoral drift system. This sediment is carried into Sag Harbor Bay by southerly transport along the east shore of North Haven and southwesterly transport along the western side of Barcelona Neck.

The Village shoreline does not contain any State -designated erosion hazard areas, and generally does not suffer from a significant erosion problem. Slight shoreline erosion was noted at several locations during a field survey conducted in January 1995; these included the bayfront at the extreme easterly end of the Village (near Little Northwest Creek), the area to the immediate east of Ship Ashore Marina, and the northwest corner of the Redwood peninsula.

The virtual absence of significant coastal erosion in the Village is attributable to a number of factors. The area to the west of the North Haven/Route 114 Bridge is sheltered from the most energetic waves originating in the open bays of the Peconic system. The two shoreline segments that were noted to have experienced minor erosion in the inner harbor, to the east of Ship Ashore Marina and at the northwest corner of the Redwood peninsula,

are oriented perpendicular to the longest fetch lines in Outer and Inner Sag Harbor Cove, respectively (where "fetch" is the distance of continuous open water over which winds can blow to create waves). However, both of these sites have suffered only minor slumping of the low embankment along the shore, and no structures are threatened. Consequently, neither site can be characterized as being an area of critical erosion.

The portion of the Village shore front between the North Haven/Route 114 Bridge and the breakwater is effectively sheltered from most waves by the breakwater. Additionally, almost this entire stretch of shoreline has been armored with bulkheads or revetments, providing artificial structural protection against potential erosion. However, it should be noted that the effectiveness of the breakwater has reportedly decreased dramatically over the years due to the gravitational settlement and wave-induced shifting of the rocks. As a result, even moderate storms, especially northeasters (which drive waves directly against the breakwater) can cause surging waves to overtop the breakwater. During a relatively modest storm in December 1994, waves that bypassed the breakwater caused substantial damage to the bulkhead at the Village Sewage Treatment Plant.

The shoreline to the east of the breakwater has the greatest potential for coastal erosion damage, since this area is exposed to waves traversing the open waters of Sag Harbor. Although the beach in this area is narrow, generally only 10 to 20 feet wide, active erosion here is presently limited to minor slumping of the low embankment at the easterly end of the beach. This lack of a significant erosion problem is due largely to the virtual absence of artificial impediments to the natural supply of sand delivered via littoral drift. Sand derived from the erosion of the bluffs at Barcelona Point is carried to the southwest by littoral currents. The shoreline along the west side of Barcelona Neck is undeveloped (including State natural resource management lands and an expansive tidal marsh), and shoreline structures (e.g., groins and jetties) that could interfere with littoral drift are not present.

In the area to the east of Walker Avenue, which includes the area of minor erosion near Little Northwest Creek discussed earlier, the individual residential lots are generally more than 200 feet deep. The houses on these properties are situated close to the street, allowing a large buffer against potential future erosion along the shore front. These properties do not have structural protection along the shoreline.

The housing lots between Walker Avenue and Haven's Beach are generally 100 feet deep or less. The homes on these parcels, which are situated much closer to the water than the homes further to the east, are all protected with structural devices (i.e., a continuous wooden bulkhead for the properties on Terry Drive, and a concrete rubble revetment for the properties between Beach Road and Haven's Beach).

F. HISTORIC RESOURCES AND OVERALL VISUAL QUALITY

(a) Sag Harbor's Historic District

In 1974, a local historic district was identified for Sag Harbor, and subsequently entered on the State and National Registers. The Sag Harbor Village Historic District was listed as significant at the State level. The district included a large portion of the waterfront, the central business district, and core portions of the nineteenth century residential neighborhoods. The statement of significance for the district nomination stated, in part:

> ...the Sag Harbor Village District is an historical environment of 18th and 19th century structures remarkably uninterrupted by 20th century intrusions. Maritime and cultural links with New England associate the Village with ports of that region rather than with other communities of New York ... the Village is extraordinary for the quantity of structures present from the 18th and first half of the 19th century, as well as for the quality of individual buildings.

Some outstanding individual buildings were described in the nomination, but the emphasis was on describing the character of the district as a whole. The predominant theme of the text and referenced buildings was Sag Harbor's whaling heritage, although buildings of several periods were included in the district.

In 1990, an intensive level survey of historic resources was undertaken to determine if a new district should be drafted for nomination. The survey concluded that the district should be enlarged, and in 1992 a new nomination was prepared and submitted to the State Board for Historic Preservation. The nomination presented new boundaries, based on the location of historic resources which relate to the six identified historic contexts of Sag Harbor (see below). The nomination was submitted to the State Board, and received its final revisions for listing on the National Register of Historic Places. The local district was amended to closely match the new State and National Register boundaries. The nomination included a full inventory of resources included in the expanded district.

There are no identified historic resources of local, State or national significance located outside the historic district boundaries (the district is shown on Figure 8).

(b) Overview of Historic Contexts and Existing Conditions

- *Settlement*

There are very few sites in Sag Harbor related to the settlement period which preserve their 18th century integrity. There are well-documented reasons for such sparse survival. The earliest construction for shelter may have been temporary in nature, since permanent settlement was delayed in Sag Harbor vis-a-vis the surrounding area. The opening years

of settlement involved rearranging the topography of the Village to fill marshes and reduce the earliest buildings to survive this kind of earthwork. Also, two major fires swept through the area known to have first been settled, destroying most of what remained. Finally, Sag Harbor's influx of prosperity in the early 19th century allowed residents to radically upgrade or build new structures, which would have been more commodious and stylish than their 18th century counterparts.

Several buildings are thought to have 18th century frames, including the Custom House, the Long Island Herald House, both on Main Street, and the George Snooks House on Hempstead Street in Eastville. None of these currently read as a settlement period house from the exterior or from interior plan. Those houses which do read as 18th century buildings from the exterior, Sagaponack House on Union Street and the Captain David Hand House on Church Street, are actually relocated from other communities. The Umbrella House, on Division Street, though much altered and in a deteriorating condition, is an 18th century building on its original site; its masonry construction adds to its uniqueness and has served to protect more of the building's integrity.

The Old Burying Ground located on Union and Madison Streets and laid out in 1767, is the most valuable cultural resource for Sag Harbor's interpretation as an 18th century community. Closed to interments in 1840 when Oakland Cemetery was opened, the site and memorial stones retain integrity as an 18th century resource.

While Sag Harbor's built environment from the 18th century is largely gone, the Village still retains its original orientation towards the harbor. Its major streets, all laid out in the 18th century, have not been altered in later years. Main, Madison, Division and Hampton Streets all follow the same basic routes they did in the 18th century. Main Street still terminates at Long Wharf, though the wharf itself is a modern construction. Hempstead Street, the old route to East Hampton later replaced as a thoroughfare, also retains part of its 18th century layout.

- *Whaling*

The survival of the structures which related to the many industries involved in keeping Sag Harbor's whale ships on the seas - shipyards, cooper shops, ropewalks, sail lofts, chandleries, wharfs, spermicetti warehouses, and blacksmiths - would greatly increase the understanding of the whaling industry. Most of these structures would have been located on the waterfront, along East Water Street (now Bay Street), and West Water Street. However, Sag Harbor's waterfront is an area that is continuously altered and rebuilt. Besides the natural process of decay that afflicts buildings in a marine environment, the technology related to maritime industries constantly changes. Sag Harbor's waterfront was also involved in both of the major 19th century fires. As the second fire occurred near the end of the whaling era, none of the industrial structures related to whaling remains. Other services related to the port activity, such as shipping offices and presses which may have

once existed in the commercial area, have also perished. The Custom House and post office are preserved in the home of Henry Dering, formerly located on Union Street but moved to Main Street, but the later arsenal, post office and police office are gone.

By far the largest survival of the whaling era is the residential building stock, spread through most of the historic area of the Village. A full range of buildings, both of designed and formal architecture and more indigenous vernacular building forms, is preserved. The most fully developed classical buildings, such as the Huntting House, are located on the major thoroughfares - Main Street and Hampton Street - which serve as "high" streets similar in character to New England communities such as Nantucket Town and Newburyport. The smaller houses owned by those engaged as crew or in supporting industries are located on the streets of less consequence, such as Rysam Street and Garden Street, or in a cluster as in Eastville. It is impressive that design details found in formal designed architecture recur in buildings of less consequence with regularity, and that these details seem to have been retained through the later 19th and early 20th centuries.

Another property type surviving from the whaling era is that of religious architecture. Whaler's Presbyterian Church replaced the earlier meeting house; the Baptist, Methodist and A.M.E. Zion churches were all built during the whaling era and survive with good integrity. The location of these buildings follows a pattern similar to the residential buildings. The Whaler's Church, designed by Minard Lafever, is located prominently on the hill of Union Street, displaying both its seniority in the community and its function as a beacon of home port for returning sailors. St. David's A.M.E. Zion Church, located on Eastville Avenue in the heart of Eastville, is relatively unknown even today, its location is so discreet.

Another resource from the whaling period are the 19th century burying grounds. Zion cemetery, located across Eastville Avenue from St. David's church, contains stones of families associated with Eastville since 1840, and is invaluable as a record of their culture. Oakland Cemetery, on Jermain Avenue, was opened for interments in 1840. Its location was nearly rural, and today it retains the attributes of a 19th century pastoral and picturesque burial ground.

- *Industry and Invention*

Fortunately, the record of Sag Harbor's industrial past exists in several building types, including residential, industrial and commercial buildings. The loss of such significant structures as the Byram-Sherry Works and the Montauk Steam Cotton Mill reduces the full picture of industrialization, though the archival record of these industries is quite complete.

The most significant survival of the industrial period of Sag Harbor is the Fahys Watchcase Factory, a.k.a. Bulova Watchcase Factory, a four-story, 73,000 square foot brick building. It is located in the center of the Village on Division Street, and retains much of its original

building material. Even in its current state of abandonment, the size and siting of the factory created an imposing statement about the importance of this industry to the community. The identification of several houses known to have been built by the Fahys Company for the workers who came to Sag Harbor furthers our understanding of the importance of this industry to the 19th century residents. Residential structures, serving as single family, multiple family or boarding house residences, all of which served the industrial population, have been identified in several parts of the Village.

Areas of the community developed for the working population in the late 19th century include areas south of Jermain Avenue (Grand, Harrison, Marsden and Hamilton Streets and Montauk Avenue), all of which were laid out by the Latham family before 1853. The declining economy of the community and the swamps and thick forests that persisted in this area delayed development until later in the century. Those lots which fronted Madison and Hampton Streets were developed first, but most of the lots were developed between 1873 and 1902. The houses in this area vary greatly in their integrity, as many of them have been altered and enlarged. In 1905, the largest remaining lot (ten acres) was acquired for Pierson High School. Other areas developed for workers in both the resort and factory industries include Bayview Avenue, Franklin Avenue, Oakland Avenue, and Jermain Avenue (formerly known as Parker, Wadsworth and Montauk Streets).

It is likely that many of the commercial structures were also developed during Sag Harbor's industrial growth. There are a few neighborhood commercial structures, but the majority of commercial activity was, and still is, focused on the northern end of Main Street. Unfortunately, these buildings have been greatly altered through the 20th century, and very few of them retain integrity as 19th century commercial structures.

- *Resort and Tourism*

The resort era brought a new population to Sag Harbor, both as transient visitors and seasonal residents. The influence of this influx is evident in all aspects of residential properties. Large houses built for successful whaling families were converted to use as summer homes and boarding houses, and new cottages were constructed for rent or purchase. Hotels were built on waterfront property formerly devoted to the whaling industry. The building activity was not limited to one area of the Village, but areas not previously built on were developed at this time.

Land in the eastern section of the Village between Hampton Street and the water, property previously owned by Mulford and Sleight, was developed by the Sag Harbor Real Estate Company. Franklin Street and Prospect Avenue were laid out between 1890 and 1902, and several houses on Bay Street (formerly East Water Street) were also built in this period. A large number of these cottages survive today, displaying characteristics of the late 19th century such as wraparound porches, decorative shingling, turrets and bays. The area became more completely associated with the construction of the Frank Havens estate (now Cor Maria). In general, tourist oriented sites within the Village are found in the early

settlement and harbor area which make up the Historic District established by the Village Board of Trustees to help preserve them.

Palmer Terrace, opened in 1891 in an area known previously as "Huntting Hill," has large, shingled Queen Anne style homes built over a twenty-year period. Although many of these houses were constructed for the resort industry, some may also have associations to the industrial leaders of the community. For example, Eaton's house was built as a summer cottage, but seems to have served as a full time residence after Eaton's establishment of his business in the Village. The buildings on Palmer Terrace survive with a high level of integrity. On the west side of the Village, cottages were constructed on John Street, near Upper Sag Harbor Cove, which also survive with a high level of integrity.

Buildings designed to house the more transient visitor survive in less quantity, and often in an altered form. Boarding houses such as Mary King's Rooms on Rysam Street are extant, but not currently functioning as boarding houses. The only hotel surviving from the resort period is the American Hotel on Main Street, which retains much of its 19th century material. Other wood frame hotels which survived into the 20th century have burned or been taken down.

Structures designed to serve the tourist population's leisure activities and transportation needs have also disappeared. The only railroad building extant is a freight depot, relocated and now used as a garden center. None of the steamship accommodations survive. The Sag Harbor Yacht Club - built in Deering Harbor as New York Harbor Yacht Club Cruise Station - retains both its original use and building form, and is representative of other waterfront structures that have been demolished. Some features of the fairgrounds survive in the current Mashashimuet Park, but the grounds as a whole are more reflective of Mrs. Russell Sage's work. Marine Park and Haven's Beach are both important open spaces reserved for recreational use early in the 20th century, and continue in that use today.

- *Eastville*

The area known locally as Eastville consists of Hampton Street, Hempstead and Liberty Streets, and Eastville Avenue. This area lays well outside the developing Village of Sag Harbor. Not until the industrial development of the late 19th and early 20th centuries, when houses for factory and resort workers were built on the outskirts of the Village, did the Eastville area become part of the fabric of Sag Harbor Village.

The history of the Eastville area dates to the first decades of the 19th century when the area was known as Snooksville. George Snooks' house on Hempstead Street, a known 19th century route, contains mid-18th century timbers. Freed Afro-Americans came to the Snooksville/Eastville area in the opening decades of the 19th century as well, though it is not yet clear from where they may have come. Sag Harbor, because of its ample maritime job opportunities, was a likely destination for freed Afro-Americans. Crew lists from the first quarter of the 19th century indicate that from 20 to 30 percent of seamen sailing on Sag Harbor whalers were either Afro-American or Native American.

The institution that brought stability and a sense of community to Eastville was St. David's A.M.E. Zion Church, constructed in 1840 on Eastville Avenue. During the mid-1850's the ethnic mix of Eastville, already including Afro-Americans, Native Americans and white English, expanded to include other immigrant groups, particularly from England and Ireland. During the 1860's, the women of Eastville took jobs as domestic servants in the homes of Sag Harbor's wealthier residents. Many also earned extra money as dressmakers, laundresses or tailoresses. In the last quarter of the 19th century, many of Eastville's residents found employment in the tourist industry of Sag Harbor.

As a result of these demographics, the small houses of Eastville, many built during the more prosperous years of the 1840s, were enlarged by the addition of dormers, rear ells and front porches. These types of additions are more common than the addition of new structures. Due to the small size of the Eastville buildings, in general, most have been greatly altered or modernized for suitable living conditions. The significance of Eastville lies in the preservation of the homes of a distinctive integrated working-class community, and the importance of St. David's Church as a religious community committed to the Afro-American and Native American populations.

- *Mrs. Russell Sage*

All of the buildings restored and built by Mrs. Russell Sage still exist, and attest to her vision and thoroughness. Her two restoration projects, the John Jermain House and the Benjamin Huntting House, both on Main Street, retain much of this 19th century material. Unfortunately, the wood columns of the Huntting House were replaced with aluminum columns which detract from its integrity. The buildings constructed with funds donated by Mrs. Sage - the John Jermain Library and Pierson High School - also both survive. The library has remained intact, while the high school has been enlarged and new windows have been installed - both detracting from the original form. The two open spaces developed by Mrs. Sage, Otter Pond and Mashashimuet Park, continue to provide a location to pursue recreational interests for Village residents. New construction on the lots surrounding Otter Pond has respected the mandate to keep the pond undeveloped. The buildings erected in the Park for the superintendent and groundskeeper retain features of their early 20th century construction.

(c) Archaeological Resources

An Algonquian Village called Wegwagonock preceded the European settlement of Sag Harbor. The name of the village and its location were recorded in the East Hampton Town records of 1711, 1718 and 1728. The topography of Sag Harbor was different in Wegwagonock days. The land under the American Hotel, the Corner Bar and the Bay Street Theater rose to form a bluff 50 feet high, known as Turkey Hill beside a small kettle pond (now the American Legion) where a freshwater stream (now Burke Street) emptied into the bay. The kettle, called the "frog pond" in time past, and the stream were surrounded by a broad, flat meadow where grass grew luxuriantly as late as the 1840's. The shoreline near the frog pond reached out for almost one-half mile to form a long, low

point of land to the northeast (later called Conking's Point), creating a half moon bay of graceful proportions. Inland to the southeast, the land rose to become another 50 feet high hill (today's High Street). Wegwagonock was a safe harbor, tucked between protecting hills, supplied with ample fresh water by the pond and the stream, with a high lookout point over the bay on one side, and low, easy access to the water on the other. The village enjoyed a varied diet of fish, shellfish, wild foul, game, nuts and berries. It prospered on a profitable trade in wampum shell beads.

William Wallace Tooker, Long Island's pioneer ethnographer who was a resident of Sag Harbor, identified the boundaries of the old village based on the Algonquian artifacts he found. He wrote that Turkey Hill was leveled to fill the surrounding low land, and although Wegwagonock graves were found on the southeast side of the hill, they were discarded as landfill.

The Algonquians gave Sag Harbor a name. Each fall the women of Wegwagonock harvested ground nuts - apios tuberose - twining vines with tubers the size of hen's eggs. They foraged in nearby Sagaponack which meant "the place where the big ground nuts grow" in the Algonquian language, according to historian W.S. Pelletreau. When the Europeans who settled in Sagaponack needed a harbor on the bay, Sag Harbor acquired the "Sag" part of the ground nut name.

All of Sag Harbor was designated an area of intensive aboriginal habitation in the 1978 Suffolk County Resources Inventory. This same publication lists early twentieth century sources which indicate Native American sites and artifacts. While many sites have been disturbed by development activity, there are a few sites - vacant lots, back yards, parks, roads and cemeteries - that could have significant remains. The earliest part of the Village, located in the central business district, is also likely to have been obliterated by development. Evidence of the foundations of the waterfront industrial buildings can be seen in shadings in vacant land, and it is very likely that archaeological evidence could be found underground. Shipwrecks have been found in the waters, along the waterfront, and it is very likely that the waterfront holds significant remains of piers, wharves, docks and ships.

The New York State Archaeological Sensitivity Map, dated March 1992, shows that Sag Harbor has multiple site sensitivity.

(d) General Community Character

Sag Harbor's general community character is a combination of several elements, including the pattern of its streets, the scale and placement of its buildings; the relationship of structures to the waterfront; landscaping and street scape features; and the views from different areas to the water. There are also important views from the water to the Village to consider, which are often seen across a water body and framed by other built or natural features. Sag Harbor's history constantly refers to the water, and therefore the visual

connection to the water is an important feature of any area. Conversely, Sag Harbor has been approached by hundreds of people by the water, and so its water side is also critical.

The developed areas of Sag Harbor are reflective of a street pattern established in the 18th and 19th centuries. The oldest streets are closest to the waterfront, and radiate from the focus of marine activity, Long Wharf. The central business district - Main Street - has been continuously developed and rebuilt following successive fires; though it follows its 18th century route, most of its buildings are reflective of post-1850 building traditions. To the east of the business district are a group of short, densely settled streets (Rysam, Cross, Rector and parts of Division) which are reflective of the street patterns and building scale of the 18th and early 19th centuries. To the southwest of the central business district, Garden Street also maintains this early character. As the community developed to the south, new streets were opened through the early 19th century. Union, Jefferson, Suffolk and parts of Madison Street, are notable for their buildings of the Greek Revival style, built in the 1820's and 1830's. The character of these early residential areas is defined by narrow streets which often are not straight; mature trees; and buildings with decorative details designed to be viewed from the street. The lot sizes in the 18th century portions of the Village are considerably smaller than the 19th century lots.

Later 19th century residential areas can be found to the east, in the High and Bay Street, Prospect and Franklin Avenue areas. These houses were built for Sag Harbor's resort trade in the 1880-1920 period, and feature wide streets and large houses set well back from the street. The porches, towers and bays of those houses take advantage of summer breezes and views.

Twentieth century development is found to the extreme east and west of the Village, in neighborhoods known as Azurest, Ninevah and Sag Harbor Hills (to the east), and Redwood (to the west).

As noted above, much of the historic connection of the Village to the waterfront has been lost due to fires and loss of waterfront industries. In many places the loss of buildings has resulted in visual access to the water which would not have been as likely in the 19th century. The views which have resulted increase the appreciation of Sag Harbor's picturesque setting.

(e) Character Areas

The 1986- LWRP identified three individual character areas: Village Business Center/Waterfront, Eastern Residential Waterfront, and Western Waterfront. These areas might be more succinctly defined by the breakdown of character areas as provided below. The eleven individual character areas are relatively intermingled near the center of the community, and more homogenous toward the boundaries. Photographs depicting each character area are included in Appendix F.

1. Marina Character Areas - include water-dependent and water-enhanced marine commercial activities, including boat dockage/mooring and repair, boat storage, and retail sale of marine fuel and equipment. These are the areas available to the public for waterfront commercial activity on a fee basis, and are indicative of the popularity of Sag Harbor as a recreational boating area. Although the buildings within these character areas are largely undistinguished, the visual landscape consists of boat hulls, masts, moorings, piers, docks and usually hosts a lot of activity. The character of these areas changes dramatically with the seasonal changes in boating activity - during the late fall, winter and early spring, when boats are hauled, the boat yards become congested, while in the spring, summer and fall, the waters are more densely populated. This fluidity allows for vastly different views, particularly as there are few permanent buildings in these areas. Several areas along the waterfront fit this description, including the Bay Street boat yard, Sag Harbor Yacht Club, both public and private boat dockage and mooring areas; also, included in marina character areas is the marina and boat yard use of Redwood Canal.

2. Marine Recreational Character Areas - include water-dependent and water-enhanced activities such as boat launching, boat dockage and mooring, beach use, and passive recreation facilities. These character areas include sites that are accessible and available to the public on a noncommercial basis, and are largely in public ownership. Many of these sites maintain natural landscape features, such as trees, lawns, open space, unpaved areas, and there are few buildings. Most have facilities such as benches, piers, bulkheads or other "perching" places to enjoy water views. These areas would include Haven's Beach, Marine Park, Windmill Park, Long Wharf and Otter Pond.

3. Marine Natural Character Areas - include sites that remain in an undeveloped state, such as a beach shore and wetlands area. These areas are inclusive of areas never developed and those areas which, once developed, are returning to their natural state. These areas support both vegetation and wildlife. The major areas include the wetlands on SPLIA's Custom House property, the area west of Northwest Creek, and the upper reaches of the Ligonee Brook drainage area, though there are several other small lots scattered throughout the Village.

4. Marine Residential Character Areas - include sites that have been developed with residential dwellings. Certain aspects of the visual character in these areas may reflect retained or restored natural scenery, such as wooded and landscaped portions of the properties, and fringing beaches and wetlands. However, the difference between these areas and Marine Natural Character Areas lies in the presence of structures and appurtenances associated with the residential development. Sites along the waterfront identified as Marine Residential Character Areas include the entire shoreline in the cove complex, west of Ship Ashore Marina (i.e., Redwood Neck, Inner Sag Harbor Cove, Upper Sag Harbor Cove, Morris

Cove, and outer Ligonee Brook), and the shoreline to the east of the breakwater, between Haven's Beach and the wetlands at Little Northwest Creek.

5. Business District Character Areas - include retail businesses, public buildings, pedestrian amenities, parking lots and, commercial buildings designed for commercial purposes and built as such, or buildings converted to commercial use from another use. These businesses are not maritime in character, but are a mix of "core" businesses such as grocery stores, hardware stores, delicatessens, offices, banks, and "specialty" stores such as art and craft galleries, clothing stores, and antique shops. Sag Harbor is fortunate to have maintained a mixed palette of commercial interest and a low vacancy level. The commercial activity is primarily located on Main Street, from Long Wharf to the fork at Madison Street, but commercial activity is also found near the waterfront east of Long Wharf, along Long Island Avenue southwest of the North Haven/Route 114 Bridge, and in the motel area on West Water Street. Small neighborhood ventures are found on Division Street, south of the Village's core, and on Main Street, near the Otter Pond bridge.

6. Residential Character Areas - include residential units, primarily single-family structures. While the historic housing described above dominates most of the central Village, large tracts of land have been developed in the past 50 years to the east and west of the Village. These neighborhoods (Azurest, Ninevah, Sag Harbor Hills, and Redwood) were developed primarily for their proximity to the water. They are largely single-family 2-4 dwelling units/acre and 5-10 dwelling units/acre. Those developments in the eastern portion of the Village have the quality of "houses amongst the trees," resulting from a high number of undeveloped lots and a low density unit/acre figure. In fact, very few houses actually have water views or waterfront locations. Redwood, located in the western part of the Village, is more landscaped and more fully developed. Here the waterfront plays a primary role in shaping the development of new buildings and additions, with wetlands abutting many of the building lots. The historic core of the Village draws its character from a more historic mix of fences, building setbacks, curbing, sidewalks and mature trees.

7. Industrial Character Areas - Although industrial and manufacturing activities are not permitted in the waterfront or marine districts, there are still several sites close to the waterfront which are industrial in character. These sites reflect Sag Harbor's 19th and early 20th century history of a manufacturing center, and are not unlike those found in the mill towns of upstate New York or New England. The natural gas storage container, Bulova Watchcase Factory, Eaton's Building on Jermain Avenue, and two small industrial buildings on Bay Street remain to represent this important era of Sag Harbor's development.

8. Open Space Character Areas - include upland areas without direct access to the waterfront which may be in private or public ownership, but visually accessible by

the public. These areas may be land "yet to be developed," or, in fact, protected. The lots exist as small oases in the more heavily developed areas. Often they provide a stand of trees or thicket of brush which has become home to birds and animals, and they also provide screening from more heavily developed areas.

9. Multi-Unit Residential Character Areas - include apartments, condominiums, villas, motels and inns. This high density development houses seasonal, temporary and permanent residents, and is found largely in the western part of West Water Street. The units are all of 20th century design and construction, and are designed to take maximum advantage of water views and access. These areas tend to have an atmosphere of privacy and seclusion, using limited access driveways, landscaping which screens activity from the public roadways, and water access restricted to residents.

10. Institutional Character Areas - include schools, churches, meeting halls, retreat centers and museums. These institutions are often located in adaptively-reused structures, such as Cor Maria (the former Havens Estate), and the Whaling Museum (the former Benjamin Huntting house); others are custom built for their purpose, such as the library, firehouses and most of the churches. These buildings are scattered throughout the historic district and the waterfront area, and are important as publicly accessible historic buildings.

11. Agricultural Character Areas - There is one site, the Cilli farm located on Glover Street, which maintains the qualities of its prior use as a dairy farm, including barns, fields, outbuildings and equipment. As agriculture was not historically common in Sag Harbor, the surrounding areas of Bridgehampton and Sagaponack being more suitable for farming, this singular site is unique and retains badly needed open space within the Village.

(f) Views/Visual Access Points

Because of the high level of public ownership, open space, and accessibility of the waterfront, good views toward the bays and coves are quite common. In fact, a large number of residents enjoy water views from their residences, and also from their places of work.

The view of the Village is linked with the water. The temporary visitor will most likely first see Sag Harbor in relation to the water, whether arriving by boat, the North Haven/State Route 114 Bridge, the Bridgehampton/Sag Harbor Turnpike, or County Route 60 (Long Beach). The irregular coastline which consists of inlets and developed and undeveloped shoreline combines with the built environment and trees to produce a complex picture. Sag Harbor "sits" in its environment, with neither the built nor natural environment dominating.

Visual access to the water from the Village is available at a great number of locations. Photographs seen on the following pages depict views from Long Wharf, Marine Park, Otter Pond, Redwood, and Windmill Park. These views include manmade features in the foreground, and marine and natural features in the middle and backgrounds. (Viewpoints are shown on Figure 8; accompanying photographs are in Appendix F).

2.4 SUMMARY: ANALYSIS OF ISSUES, PROBLEMS AND OPPORTUNITIES

A. LAND USE AND ZONING

Development Potential

- **Cor Maria**. Cor Maria is a 16.7-acre Roman Catholic Church retreat which lies between Haven's Beach and the WF Waterfront Zoning District. It has more than 1,600 linear feet of shoreline on both the active harbor and Sag Harbor Bay. The breakwater structure that protects the harbor area extends from the shoreline of the Cor Maria property. Although no change is anticipated in the use of this property, if it should become available for reuse, it would have a significant impact on the entire Village and its character. This property is zoned for residential use and could yield an estimated 30 dwelling units.

In an effort to preserve the quality and character of the historic Cor Maria property - if the Roman Catholic Diocese should decide to sell this property - the Village should manage redevelopment of the site in congruence with zoning standards.

- **Cilli Farm**. This 8.97-acre property, located along Glover Street and Long Island Avenue, is referred to as "the Cilli Farm." This presently undeveloped property was previously a working dairy farm. It is zoned as R-20 One-Family Residence.

The Village is pursuing alternatives to maintain the property as open space.

Underutilized and Deteriorated Sites

A number of deteriorated and underutilized sites have been addressed since the first LWRP was adopted in 1986: Long Wharf has been reconstructed; Bay Street and West Streets have been repaved and rebuilt; a tourist information center has been established at Windmill Park; Marine Park has been renovated; Haven's Beach has been upgraded; the Village's business center has improved parking, and various landscaping improvements have been made; additional overnight accommodations in the Village are now available; water quality in Upper Sag Harbor Cove has been improved; and a portion of the Mobil Oil property has been acquired and improved as a park and parking area. Deteriorated and/or underutilized sites which remain and require attention are as follows:

- **Bulova Watchcase Factory Building**. The Bulova Watchcase Factory Building is a four-story, 80,000 square-foot, brick building. It is vacant, but considered to be in very

good condition. It is a locally designated historic/cultural landmark building, located within the Sag Harbor National Historic District. The Village approved an adaptive reuse of the building - to residential condominiums in the early 1980s. The capacity of the sewage treatment plant has been expanded to accommodate these condominiums, among other anticipated uses.

The Bulova Watchcase Factory site has undergone remediation to mitigate soil and groundwater contamination problems resulting from the former use of the site.

Water Use Districts

The waters around Sag Harbor are heavily used by both recreational boaters and commercial water craft. The high intensity of use in certain areas has caused conflicts in waterway usage (including dockage, moorings and anchorage), and navigation. The Sag Harbor shoreline has areas devoted to harbor use, residential areas, and other natural shorelines. Environmental quality requires that the shoreline area be managed in a manner which directs development, human activity, and shoreline hardening activities to the harbor area, and guides development away from environmentally sensitive lands.

Local regulatory standards and guidelines to be applied along the shore and to govern surface water uses are identified in Section 6 of the Village's Harbor Management Plan (1996). They address the physical design of structures and maintenance of navigational infrastructure, as well as use of surface waters. These standards have been adopted as an amendment to Chapter 53 (Waterways).

Using the powers granted by the State - to regulate construction up to the shoreline, and surface waters extending 1500 feet beyond - the Village can implement many of the harbor management concepts put forth in the Harbor Management Plan. Planning concepts which are not implemented through local legislation should be used by the Village to guide future efforts and to support responses provided the Towns of Southampton and East Hampton on their respective land use decisions about underwater land use within the Village's harbor.

A set of standards which should apply in all water use districts is put forth in the Village's Harbor Management Plan. These will serve generally to protect water-dependent uses, navigation utility, and environmental quality. The plan also puts forth more specific standards to guide development in each of the water use districts, in a manner which is both compatible with historic development trends and appropriate to environmental characteristics.

Water use districts are necessary to define appropriate surface water activities and to promote shoreline management in the Village of Sag Harbor. Identified on Figure 3, in order of use intensity, these are: *Harbor District, Low Intensity District, and Conservation District*. A fourth water use district, the *Preservation District*, is recommended for ultra environmentally sensitive areas.

A premise of harbor management is that surface water use should be related to environmental characteristics, land use and navigational patterns. The *Harbor District*, for example, is the appropriate center for boat fishing, boating, and shellfishing for market purposes (known as "secondary contact recreation"). It is not a suitable area for human water sports such as swimming, diving, water skiing, and surfing ("primary contact recreation"). Primary contact recreation, in addition to secondary contact recreation, can be accommodated in the *Low Intensity* and *Conservation Districts* - provided safety and harbor management standards are enforced. Only unmotorized human water sports would be appropriate surface water uses for the *Preservation District*.

The *Harbor District* is best suited for accommodating high concentrations of water-dependent uses along the Sag Harbor waterfront. Water-dependent uses are defined as activities requiring a location in, on, over, or adjacent to, coastal waters because the activities require direct access to the water. Uses with the highest degree of dependence on waterfront access for navigation include commercial activities that require water depths to navigate, such as marinas, turning basins and docking facilities. Under the standards, preference will be toward water-dependent uses in areas that have been previously developed and do not exhibit significant natural resource values. Shoreline hardening to protect water-dependent uses is appropriate in the *Harbor District*.

The *Low Intensity District* serves as a transitional area between more intensive harbor uses, and conservation areas. The district is appropriate for residential waterfront uses, sited in a way which protect and promote public access opportunities. More intensive water-dependent uses such as marinas - appropriate for the *Harbor District* - are not appropriate for the *Low Intensity District* unless dictated by the unique siting requirements of a given use, and then only if all potential significant impacts are mitigated. Shoreline hardening should be limited to locations above the mean high water line and should only be utilized after all other nonstructural alternative erosion control protection methods have been exhausted.

- **The Village recommends that structures in waters be limited to the lesser of 60 feet in length, or 4 feet in depth in the *Low Intensity District*.**

The *Conservation District* is intended to support sensitive environmental resources and habitats. Construction in this area should avoid disturbance of natural shorelines. Projects which protect and enhance beaches, nearshore, bars, spits, wetlands, and other natural protective features shall be promoted. Shoreline hardening should only be used when no other practical design consideration is suitable, and only when essential to protect principal upland structures. Practical nonstructural vegetative measures should be used initially.

- **The Village recommends that structures in waters be limited to the lesser of 60 feet in length, or 4 feet in depth in the *Conservation District*.**

- **Preservation District. A *Preservation District* is recommended for areas which, because of their environmental character, deserve the highest protection from human**

activity. These areas proposed for the *Preservation District* include Round Pond, Otter Pond, Fore and Aft Pond, portions of Ligonee Brook and Little Northwest Creek. Only passive recreation activities, such as walking and viewing, should be allowed. The Village recommends that construction of shore hardening structures in the *Preservation District* be prohibited.

B. PUBLIC ACCESS AND RECREATION

The Village has the opportunity to expand and improve municipal facilities and public access by implementing infrastructure improvement projects and land use regulations. The ability of the Village to improve recreation facilities depends upon the human and financial resources available. The Village will continue to solicit grant support, donations and assistance from outside organizations (e.g., Suffolk County, nonprofit agencies, private owners) to upgrade public recreation facilities.

Parks

The Village of Sag Harbor owns four parks/recreation facilities: Haven's Beach, Windmill Park, Marine Park, and the Long Wharf. They are all located on or near the harbor. Long Wharf is owned by the County, and managed by the Village. Cumulatively, these facilities provide a considerable amount of waterfront access and recreational activities to the public.

▸ **Zoning. Haven's Beach is zoned for residential use. Marine Park, Windmill Park and the Long Wharf are zoned for waterfront use. To insure that park lands will remain as public recreational and open space, the Village should rezone Haven's Beach, Marine Park, Windmill Park and Cove End Park to an open space/recreation classification. Conservation lands owned by the NYSDEC on Little Northwest Creek would also be appropriate for this classification.**

• **Windmill Park** encompasses approximately 1.9 acres of shore front area that extends along both sides of the Sag Harbor/North Haven bridge abutment. A tourist information center, operating in the summer, is the only building on the property. It is housed in a windmill structure in the southeast corner of the park. Several benches and a single picnic table are situated on the east. The west is undeveloped and essentially unused. There is no direct connection between the two sides of the park. Minor additions, such as landscaping and walkways and benches, would significantly improve the park. [The State Department of Transportation proposes to reconstruct the North Haven/State Route 114 Bridge (scheduled to begin construction in the spring of 1999). Accessibility concerns could be discussed, with potential improvements made at such time.]

Boat Ramps

The Village has three, public boat ramps which access the bay. Each is in need of repair.

• **Marine Park Boat Ramp**. There is a concrete boat launching ramp at the Marine Park boat basin (see Figure 4) which provides access to the bay. This ramp is heavily used by baymen and recreational boaters, particularly in the summer. It is beginning to crack and subside, and the culvert located to its immediate east is collapsing.

▸ **The Village should repair this public boat ramp, and pursue project funding opportunities as they become available.**

• **Boat Ramps off John Street and Amherst Street**. These two boat ramps provide access to the Sag Harbor Cove Complex. They need to be improved for recreation and to address water quality problems (as discussed in the water quality section). The ramp off John Street provides access to the southeastern end of Upper Sag Harbor Cove. It is regularly used by fishermen and baymen. The second ramp - located on Inner Sag Harbor Cove on the Redwood peninsula, at the terminus of Amherst Road - provides access to Inner Sag Harbor Cove. Both ramps are unpaved, and through years of use have developed ruts and small swales which hinder launching and convey runoff and sediment into the cove.

▸ **Ramps need regrading. Large-size gravel should be installed that will stabilize the ramps, make the launch process easier, prevent sediment from entering the bay, and retain a permeable surface to permit continued percolation. In addition, small berms should be constructed at the top of each ramp, near the road, to prevent surface runoff from traveling down the ramp.**

Street Ends

There are three street ends in the Sag Harbor Cove Complex that provide public access to the waterfront: Yale Road, Notre Dame Road and Dartmouth Road. Selected street ends could be improved to provide better public and visual access to the waterfront.

Pedestrian Circulation

Bay Street and West Water Street, along with a short length of Long Island Avenue, are the Village's waterfront roadway. The development of their frontages and street scape - as they relate to each other and the waterfront - is disorganized, inconsistent in character and, in some instances in poor condition. This area, along with the area of Long Wharf, presents an outstanding opportunity to further improve both the environmental and economic qualities of the Sag Harbor waterfront.

Although Sag Harbor has both an attractive waterfront and a wonderful collection of historic buildings, ease of access, for tourists and other visitors, could be improved. As reported in recent years, approximately 4,800 tourists arrive each year by ferry - all pedestrians. Their enjoyment of Village resources can be substantially enhanced by better guidance and easily discerned pedestrian routings. The objective is to provide a well-

connected pedestrian access system that lends itself to self-guided tours through the Village waterfront and business center.

Many others come to Sag Harbor Village by automobile. Searching for a parking space adds to the congestion in the Village business center streets during the peak season. Finding a place to park is only the first step toward a successful visit. They must become pedestrians to really enjoy the beauty of Sag Harbor.

An important prerequisite in developing this opportunity is the planning coordination of public and private projects in such a manner as to achieve the greatest benefit for all. A major aspect of this is the opportunity to develop a continuous shoreline pedestrian walkway linking the various waterfront elements and also linking the waterfront with the Village business center and the major historic sites in that vicinity. One problem in considering this shoreline promenade is the lack of a well balanced pedestrian circulation pattern which would connect the promenade's extremities with the middle and southerly sections of Main Street in the Village business center. Encouraging walking would tend to decrease the automobile congestion problem in the center.

Underwater Land Grants

The State of New York Office of General Services (OGS) issued seven grants to various upland property owners for underwater lands in the Sag Harbor area. These grants were issued between 1845 and 1968, and in most of these cases these lands consist of upland properties or portions of the upland that were formerly underwater lands that have been filled in. Research into the status of these seven grants has revealed that all of the grants were issued with full interest given to the grantee. Unless the upland was sold to another party or surrendered to the State, ownership of the underwater lands remains with the original grantee; otherwise, the lands belong to the current upland owner. With the exception of a grant issued to the East Long Island Pottery Company in 1882, which was never utilized, the underwater land grants in Sag Harbor are all accounted for.

There are three waterfront properties that have been developed that do not have grants from the OGS. These include:

- the underwater lands that contain the Waterfront Marina owned by Malloy Enterprises;

- the former underwater lands that comprise the Marine Park property, which is owned by the Village of Sag Harbor; and

- the underwater lands and small upland area of the Sag Harbor Yacht Club property.

▸ **Grants/consents/leases for these lands should be obtained from the State. The Village should urge the State Office of General Services (OGS) to be specific and restrictive regarding the use of the underwater lands in the permit to insure the**

grants/consents/leases serve to prevent future uses and activities that may be inappropriate for waterfront locations.

- **In addition, the Village of Sag Harbor was conveyed a portion of the underwater lands originally granted to the Long Island Rail Road (LIRR) in 1888 - when the existing Sag Harbor/North Haven bridge was constructed. Based on records provided by the Office of General Services, the LIRR still owns those underwater lands. The Village has suggested to the LIRR that the lands be given back to the State.**

C. VESSEL USAGE AND WATERWAYS

Sag Harbor is a popular location for recreational and commercial boaters. During the summer boating season, the *Harbor District* is subject to extensive vessel traffic, particularly on weekends, as evidenced by data collected by the Village Harbormaster's office. Accordingly, vessel congestion occurs in a number of locations throughout the Harbor District. At some of these locations, congestion problems are heightened by localized shoaling.

In Sag Harbor, the area under the North Haven/State Route 114 Bridge tends to get congested due to the fact that the channel narrows just where there is a significant amount of vessel traffic created by boats seeking egress from and ingress to marinas and docking facilities in Outer Sag Harbor Cove. That area provides dockage for up to 385 vessels. The fueling dock at Sag Harbor Cove West Marina is another location of congestion in the Outer Cove.

Significant vessel activity occurs at the head of Sag Harbor, near Marine Park. The marinas and boatyard in this area provide dockage for approximately 225 boats. The Village anchorage area and the boat launch ramp can also accommodate a large number of vessels. As a result, during the summer, the head of Sag Harbor can become congested with vessels seeking to dock or head out into Sag Harbor Bay. Congestion also occurs where the channels meet in the harbor on the eastern side of Long Wharf, or by the docks on the west side of Long Wharf.

The Village's Harbor Management Plan evaluates waterway navigation and vessel use on the surface water bodies surrounding the Village of Sag Harbor. The plan addresses conflicts between surface water uses and harbor congestion. The issues and actions relevant to vessel use and waterways which serve to promote navigational safety and protect harbor infrastructure are summarized here.

Navigational Safety and Minimization of Conflicts

- **Enforcement of Waterways Regulation**. Jurisdiction with respect to over water vessel uses within the harbor complex is divided among the Village of Sag Harbor, the Village of North Haven, and the Towns of Southampton and East Hampton. Pursuant to Chapter 46A of the State Navigation Law, the Villages have the exclusive authority to regulate the over water use of vessels upon the waters that lie within 1,500 feet of their respective mean high water line. Additionally, in accordance with Section 130.17 of the New York State

Town Law, the Towns of Southampton and East Hampton regulate over water vessel use upon waters within their municipal boundaries, but not within the municipal limits of a village or the 1,500-foot area of water surface that extends from the mean high water line adjacent to incorporated villages. The Town of Southampton is responsible for the patrol of surface waters and enforcement of waterways regulations in Southampton Town waters. They include those portions of Outer and Inner Sag Harbor Cove lying outside of the Village's jurisdiction. Throughout the summer boating season, when recreational boating and other in-water recreational activities increase, the Town does not conduct regular patrols in this area due mainly to the fact that these waters are isolated from the main body of the Town's waters. In these areas, the Village Harbormaster can issue warnings to boaters in violation of waterways regulation but cannot issue citations or enforce Town law.

▸ **The Village of Sag Harbor should make an effort to cooperate with the Southampton and East Hampton Boards of Trustees regarding enforcement of common waters; The Village and Towns should each pass a local law to establish a cooperative agreement to allow the Village to assist with patrols in this area, and to transfer authority so the Village can enforce existing Town regulations.**

• **Docks**. The Harbor Management Plan notes that there are a number of docks located along the shoreline of Sag Harbor. Construction of private docks becomes an issue in areas where there is heavy vessel traffic, such as the harbor, because docks can worsen harbor congestion and threaten interference with navigation channels. They are also a concern in areas where there are significant natural resources.

Dock construction requires permits from the Village (and Southampton Town or State Office of General Services, depending on underwater land ownership). The Village should control the construction of docks. Dock construction should be directly connected with the character of the upland use. If the upland use is not water-dependent, then a dock should only be permitted to provide necessary access to reach navigable waters.

In the area west of the North Haven/State Route 114 Bridge, (designated as the *Low Intensity District*), where there is a narrow stretch of navigable waters between the land mass, water use activities have the inherent potential to conflict with navigation. Access through Outer Sag Harbor Cove is dependent on the maintenance of the existing navigation channel. Since the location of the channel in this area is fixed, the expansion of navigational access for private residential uses should not interfere or encroach on the navigation channel, nor result in increased vessel congestion.

▸ **The Village recommends that structures in waters be limited to the lesser of 60 feet in length, or 4 feet in depth in the *Conservation District*.**

Infrastructure

• **Breakwater Repair**. The breakwater that separates Sag Harbor from Sag Harbor Bay acts to shelter the harbor from the open waters of the bay, reducing the impacts of wave action generated in the bay. The breakwater was constructed in 1908 and rehabilitated in 1963. It is once again in need of repair. In the past thirty years, this structure has succumbed to gravitational settlement and wave-induced shifting of the rocks. Some of the supporting stones have fallen off. The effectiveness of the breakwater has been dramatically reduced to the point that even during moderate storms, especially northeasters (which drive waves directly against the breakwater), surging waves overtop the breakwater. The Army Corps of Engineers has conducted a field visit to assess rehabilitation needs, and determined that it needs to be rebuilt.

▸ **The breakwater should be rebuilt. Reconstruction proposals should consider height - appropriate to conditions.**

• **Dredging**. Water-dependent uses in Sag Harbor rely upon the navigational access infrastructure that has been established. Some of these channels have not been dredged since they were first established. In addition, there are areas situated outside of the delineated channels (including the western side of the breakwater, the anchorage area west of Long Wharf, and the area in the vicinity of the north end of the Long Wharf), that are in need of dredging to mitigate shoaling and water depth problems. [Refer to Policy 5.2, and the Village Harbor Management Plan.]

▸ **Dredging is an important activity with costs and impacts that require it to be undertaken to meet the current and future needs of water-dependent uses in the *Harbor District*. Dredging activities undertaken east of the North Haven/State Route 114 Bridge should be continued to the ten-foot depths initiated by the Army Corps of Engineers. West of the bridge, access channels should be maintained at sufficient depths (four feet below mean low water) to meet the needs of existing water-dependent uses.**

▸ **In 1960, the Suffolk County Department of Public Works (SCDPW) constructed an extensive navigation channel through Outer Sag Harbor Cove. This channel extends west from the North Haven/State Route 114 Bridge to the head of Paynes Creek. In 1965, this channel was extended south through Inner and Upper Sag Harbor Cove. The area in the vicinity of Marine Park was dredged in 1977, and the Village A and B Docks area was dredged in 1979. The analysis conducted as a part of development of the Harbor Management Plan determined that the portion of the main channel that extends from the North Haven/State Route 114 Bridge west to the Big Narrows, including the spur for the Village docks and the spur to the Ship Ashore Marina and Redwood Boat Basin, should be maintained in the public interest. That portion of the main channel that extends into Paynes Creek and the Inner and Upper Cove areas should remain as a designated channel, but no longer be publicly**

maintained, except in extreme circumstances --- this area is more appropriately a small craft area.

- The SCDPW has not conducted any maintenance dredging of the channels and basin in the Sag Harbor Cove/Bay Complex since they were originally established. The SCDPW has indicated that they have not received any formal requests for dredging from the Village through the Towns of East Hampton and Southampton, and are unaware of localized shoaling conditions or current dredging needs. Furthermore, with the exception of permit applications that were filed in 1990 for the dredging of a spur from the main channel to the Redwood boat basin at the Ship Ashore Marina in Outer Sag Harbor Cove, all dredging permits for Sag Harbor projects have expired. The administrative process for initiating County-sponsored dredging in local waters is a lengthy one, made worse by the time required to secure the necessary state and federal permit approvals. **The Village should promptly advise Suffolk County of their dredging needs so that the County may commence the application process and facilitate dredging where required.**

- There is a **navigation channel and turning basin** located within the **Sag Harbor area** that was originally dredged by the Army Corps of Engineers (ACE). This channel, which has not been dredged since it was constructed in 1937, was de authorized by the ACE in 1992. The Village is responsible for the placement and maintenance of navigational aids in this area. However, although this channel has shoaled and requires dredging, the federal government is no longer responsible for the dredge maintenance. Therefore, **the Village must either: 1) request that the ACE reauthorize this navigation channel; 2) request that the SCDPW add this channel to their list of dredging projects that are in the public interest; or 3) directly arrange for the private maintenance dredging of this channel.**

- **Shoaling** is impacting the **anchorage area in the harbor near the breakwater and the Long Wharf**. Shoaling is occurring along the western side of the breakwater, particularly near its intersection with the shoreline. This has restricted use of portions of the anchorage area located between the channel and breakwater to shallow-draft vessels. Shoaling is **also a problem in the small anchorage area west of the Long Wharf**, where reduced bottom depths make the area accessible only to shallow-draft vessels. Dredging would reestablish these mooring areas and improve navigation. **Both should also be added to the County's dredging list for the Sag Harbor area.**

- The NYSDEC is taking a closer look at all new dredging projects (those areas that have not been dredged within the past 20 years are considered new projects). New projects are not likely to receive approval unless an overwhelming public need can be demonstrated and the issue of acceptable dredge spoil disposal methods and sites can be addressed. In the past, dredge spoils were disposed in upland areas in the vicinity of the Redwood peninsula; Haven's Beach was utilized for the disposal of spoil materials from the Marine Park dredging site. Disposal of dredge spoils in these areas is no longer feasible because these areas are either residentially-developed, in close proximity to residential development, or (in the case of Haven's Beach) used for active public recreation. There

are no upland areas suitable for dredge spoil disposal in the Village. Therefore, **spoil materials generated from future dredging projects would likely have to be removed from the project site and disposed of at a suitable location outside of the Village.**

D. WATER RESOURCES

Water resources in the Village include surface water and ground waters. Their quality is impacted by point pollutants and nonpoint sources. Water quality problems of the Peconics, including Sag Harbor Cove and Sag Harbor Bay, are the focus of attention of various levels of government.

The Peconic Estuary Program (PEP) is a study of these problems by the local, County, State, and federal governments. The Peconic Estuary Program also focuses on such problems as the occurrence and persistence of brown tide and other especially destructive algae blooms, and the wide variety of nonpoint sources. The water quality of Upper Sag Harbor Cove is being monitored for two years as a part of the Peconic Estuary Program. The PEP has identified Sag Harbor Village as a *priority subwatershed* for analysis and management.

The United States Geologic Survey has commenced activities to assess groundwater underflow quantity in the area. The Suffolk County Department of Health Services, Division of Environmental Quality, will also be monitoring groundwater and surface water quality, evaluating pollution inputs to surface waters, and working with Department surface water quality modelers to support the development of management recommendations for the area.

Federal and State stormwater discharge permit programs are also a major undertaking for reducing the effects of point source pollutants on water bodies. In the State of New York this is accomplished through the administration of the State Pollutant Discharge Elimination System ("SPDES") program.

Point Sources

The principal point sources of pollution affecting waters in the Village of Sag Harbor are the Village Sewage Treatment Plant, marinas, stormwater discharges, and vessels. They are discussed in the following paragraphs:

- **Sewage Treatment Plant**. Sewage flow is presently discharged into Sag Harbor. Expansion of the sewage treatment plant to treat increased sewage flows and projected sewer flows. The treatment process would be upgraded to provide tertiary treatment of all sewage flows - to remove nutrients from the sewage flow that are presently discharged into Sag Harbor.

- **Marinas**. Marinas can contribute significantly to the concentration of pollutants in the water column, bottom sediments, and tissues of benthic organisms living within the limits of the marina itself. Pollutants from marinas and recreational boating may enter the water through discharges from boats, spills, maintenance areas, stormwater runoff and vessel operation. The types of pollutants often associated with marinas and recreational boating

activities include: organic materials discharges from recreational boats; toxic heavy metals associated with boat maintenance and repair operations at boatyards and marinas; petroleum hydrocarbons from refueling activities and bilge or fuel discharges from boats; fecal coliform bacteria; and, disruption of sediments and habitat from boat operations and dredging.

Point sources of pollution from marinas are primarily handled through the NYSDEC general permit for industrial activities, which applies to marinas. To receive a NYSDEC permit, marina operators are required to develop and implement comprehensive stormwater management plans and controls, and monitor runoff and pollutant discharges.

• **Stormwater**. The impacts of stormwater discharge on surface water quality can be mitigated to a large degree by the implementation of structural control measures (e.g., catch basins, leaching pool systems, and retention basins), which serve the multiple purposes of storing a specific volume of stormwater - allowing the stored water to be recharged to groundwater, and creating conditions by which sediment particles can settle out of suspension. The sedimentation function of stormwater management structures is particularly important, since most contaminants (including coliform bacteria) associate with fine-grained sediment particles. Sediment is removed from the stormwater, along with a large fraction of the associated contaminants. To keep these structures functioning, maintenance involving the removal of sediment is critical.

The Village currently applies site plan review procedures to marinas and other nonresidential land uses to assure the adequacy of such site improvements as surface drainage and on-site surface water disposal. The Village's commitment to protecting coastal water quality is also supported by the WF Waterfront Zoning District and MA Marine Zoning District -- where marinas and yacht clubs may not adversely effect adjacent tidal waters.

‣ **Haven's Beach is bisected by a drainage ditch which outlets to Sag Harbor Bay.** This ditch carries stormwater runoff collected along Bay Street and Hempstead Street - the runoff is conveyed into this ditch without pretreatment to remove pollutants. Stormwater runoff can contain a high degree of contaminants, particularly the "first flush" that is collected at the onset of a storm event. **Development of a wet detention system, or other stormwater mitigation measure, would reduce the pollution contributed by the drainage ditch.** Preliminary designs of alternative improvements are underway. The Village will require funding to implement the project and should pursue all feasible opportunities.

• **Vessels**. Vessel discharges can cause water quality problems. The discharge of these sewage wastes from boats can degrade water quality by: introducing microbial pathogens to surface waters; and locally increasing biological oxygen demand. Due to the high concentration of marine vessel activity (three marinas, one boat yard and two anchorage areas) and the location of the sewage treatment plant outfall, the entire area located inside the breakwater (Sag Harbor) is closed to shellfish harvesting by the NYSDEC on a year-

round basis. In addition, the NYSDEC has identified two specific areas in the harbor complex that are of a concern with regard to the potential contamination of shellfish beds due to seasonal water quality degradation and/or vessel discharges. These include the easterly portion of the Outer Sag Harbor Cove, and the waters in the Redwood boat basin. The NYSDEC has indicated that concentrated sewage discharges from vessels in these areas have the potential for the localized contamination of the underlying shellfish beds.

▸ To address the impacts associated with vessel waste discharges, **the Sag Harbor Cove/Bay Complex - west of the breakwater - should be designated by the State, by State statute, as a vessel waste "no-discharge zone."** The advantage of this designation would be to prohibit the discharge of sewage from marine toilets within the bounds of the harbor complex, and requires that vessels being used on these water bodies have their marine sanitation devices secured so that wastes from the marine sanitation devices cannot be readily discharged into those waters. This would be enforced by any police officer or peace officer acting pursuant to their special duties, including State Police, Environmental Conservation Police, State Park Police, Navigation Inspectors, and local Police Officers and Harbormasters. Although federal law prohibits the discharge of untreated sewage within three miles of the shore, treated sewage may be discharged inside this boundary and the U.S. Coast Guard has the sole responsibility for enforcement. The Village would enact a local law, should it be designated.

Installation of additional vessel pump-out facilities - especially in the Outer Sag Harbor Cove area - will support the "no-discharge zone" designation. **The New York State Clean Vessel Act Plan, August 1996, recommends that one additional pump-out facility be installed west of the North Haven/State Route 114 Bridge.**

• **Reclassification of Water Quality**. Water quality in the *Harbor District* is now classified as *SA* - which is the highest ranking for surface waters - indicating that waters are suitable for shellfish harvesting for market purposes, and primary and secondary contact recreation (i.e., boating, swimming). In actuality, the shellfishing and recreation potential of the area is limited because of the sewage treatment plant outfall, marinas, and anchorage areas located in the harbor. Because of these influences, 155 acres of underwater lands in the *Harbor District* (situated between the North Haven/State Route 114 Bridge and the breakwater) are uncertified by the NYSDEC and closed year-round to shellfish harvesting. In addition, in accordance with the National Shellfish Sanitation Program (described in the Village's Harbor Management Plan, Section 5.6.B and Appendix A), a seasonal closure area must be maintained around marinas to mitigate potential contamination problems.

▸ **The NYSDEC should reclassify surface water in the *Harbor District* to reflect actual water quality conditions.** The activities and land uses impacting the surface waters of the *Harbor District* will not change in the future. **The water quality classification for this area should be changed by the NYSDEC from *SA* to *SB* to reflect actual conditions.** [*SB* waters are considered suitable for primary and secondary contact recreation and any other use except the taking of shellfish for market purposes.]

• **Rowe Industries**. The Rowe Industries groundwater contamination site - located in the Town of Southampton - was listed on the Environmental Protection Agency's National Priorities List in July 1987. In 1988, a Consent Order was to conduct a Remedial Investigation/Feasibility Study to evaluate the exact nature and extent of site contamination. A preferred alternative was selected after public comment, and in September 1992, a Record of Decision (ROD) was signed for the site - to begin the remedial design and implement the proposed remedial action.

The remedial action for the Rowe Industries, Inc. Superfund Site will remove volatile organic compounds (VOCs) from the groundwater by pumping it through a series of extraction wells located on-site and in the contaminated groundwater plume. The contaminated groundwater will be conveyed from the extraction wells by underground piping to air-stripping equipment located on the site. Although the actual site is located outside the Village, the treated groundwater will be discharged to Sag Harbor Cove (by way of Ligonee Brook) through a diffuser, via a discharge pipe from the site. The diffuser will extend into Inner Sag Harbor Cove and be placed on the sediment surface. Before pumping of the groundwater begins, contaminated soils will be remediated and disposed of in accordance with all applicable federal and State statutes.

Throughout the life of the remedial action, monitoring of surface and groundwater conditions will be conducted to ensure that pumping and discharge activities do not cause significant adverse effects to nearby surface water bodies and wetlands. Baseline studies will be conducted prior to the remedial action. During the remedial action, monitoring of the condition of surface water, groundwater and the ambient air will be conducted in order to ensure that the remedial action is protective of human health and the environment. Once the clean up action levels are achieved, the air strippers, diffuser, and above ground features of the remedial action will be removed and the ground surface and bay bottom returned to conditions similar to that which existed prior to the remedial action.

Nonpoint Sources

The significant categories of nonpoint pollution impacting the ground and surface waters of Sag Harbor are fertilizers, failing on-site sewage disposal systems, waterfowl wastes, and roadway runoff.

• **Fertilizers**. Several waterfront residences in Sag Harbor have expansive lawns and ornamental plants that require fertilization. Fertilizers contain nitrates and phosphates that, in abundance, cause algae blooms. Since fertilizers constitute one of the largest sources of nitrogen applied to the land surface, they are also a significant potential nonpoint source of ground and surface water contamination.

▸ **Public education should continue, and regulation may be employed to limit or possibly eliminate the use of all or specific types of fertilizers.** Best management practices could include modification of application rates, discontinuance of reliance on fast-acting inorganic fertilizers, and promotion of low-maintenance lawns, which would require

both less fertilizer and less consumptive use of water. The use of natural vegetation and restricted usage of common garden fertilizers and pesticides would also be desirable. Slow-release organic fertilizers, wherever fertilization is necessary, would have a lesser impact. These measures could be described in a publication, such as a brochure, and distributed to Village residents. [E.g., *Save the Peconic Bays, Inc.* published a booklet that provides general information on water pollutants and offers rational actions to lessen negative impacts.]

▸ **Adopt-A-Stream**. A volunteer program should be established that would enable an individual or group to adopt a stream, pond, or length of shoreline. Each "adoption case" would consist of an initial evaluation of existing conditions and potential problems. The responsible individual or group by clearing their adopted water body by picking up trash and other debris at least twice a year, and paying attention to any negative and potentially destructive influences.

• **Failing Sewage Disposal Systems**. When not properly maintained, sewage disposal systems can cause contamination of surface and groundwater resources. Failing septic tank waste disposal systems can present a serious problem that is difficult to pinpoint through direct observation.

▸ **In order to identify faulty on-site sewage disposal systems in the vicinity of Otter Pond and Upper Sag Harbor Cove, a dye-testing program should be conducted.** The Village should investigate sources of funding, possibly in conjunction with the Suffolk County Department of Health Services, to establish a dye-testing program that would allow for the testing of systems in the area of concern, and provide financial incentives to enable local homeowners to upgrade failing systems.

• **Waterfowl Wastes**. Waterfowl waste contaminates water with pathogens and nutrients. The quality of water in Otter Pond, particularly, has become severely degraded as a result - in part - of a large resident waterfowl population. The Sage Foundation, the entity that owns the Otter Pond property, conducts an ongoing program to improve the foreshore so that pollutants are filtered before entering the pond.

• **Roadway Run-Off.**

▸ **Priority capital projects and the development of design standards for roads and bridges would be the important means of addressing urban nonpoint pollution from roads, highways and bridges. Runoff management systems should identify priority pollutant reduction opportunities and schedule implementation of retrofit projects to protect impacted areas and threatened surface waters.**

There are two boat ramps contributing sediment to the Sag Harbor Cove Complex that require improvement (also discussed under *B. Public Access and Recreation*): the boat launch ramp located on the Redwood peninsula, at the terminus of Amherst Road, and the ramp located off John Street, at the southeastern end of Upper Sag Harbor Cove. Boaters

maneuver trailers down these moderately sloped ramps to the water. Through years of use, these sites have developed ruts and small swales that convey roadway runoff and sediment directly into Sag Harbor Cove. The runoff can be reduced by upgrading the surface conditions of these ramps.

- **Both the Amherst Road and the John Street ramps will be regraded and large-size gravel will be spread that will stabilize the ramps, preventing sediment from entering the bay, and retaining a permeable surface to permit continued percolation. In addition, small berms will be constructed at the top of each ramp, near the roadway, to prevent surface runoff from traveling down the ramp. At Amherst Road, the runoff will be conveyed from the berm into a storm grate that is connected to a leaching pool. At John Street, the runoff will be directed into the drainage structure that rings the John Street wetland, rather than conveying it directly into the adjacent outlet stream that connects the pond to Upper Sag Harbor Cove. These upgrades will be instituted without significant cost to the Village, with grant assistance from the *Peconic Estuary Study*.**

E. FISH AND WILDLIFE

The following sites are either estuarine water bodies or wetland systems that have been impacted. These areas have not been designated by New York State as Significant Coastal Fish and Wildlife Habitats, but are locally important. The reasoning behind presenting this information is to outline ways in which the Village and private citizens can preserve and restore these degraded habitats.

- **Sag Harbor Cove Complex**. Water quality in this system is somewhat degraded. One major cause of degraded water quality in Sag Harbor Cove is due to input of untreated roadway runoff. For example, significant quantities of stormwater enter the Upper Cove from the northern end of CR 60 (Noyack - Long Beach Road). At this location, there are at least four points where runoff is channeled directly into waters of the Cove. These gross runoff points should be addressed by the County. Additionally, there is a major source of road runoff entering the Paynes Creek area from the residential area west of Noyack Road. This source of contamination is being addressed by the Town of Southampton.

  Another reason for degraded water quality has been the loss of most of the original wetland fringe from the perimeter of the Cove. Construction of shoreline stabilization structures, docks and the deposition of dredge spoils has reduced the total salt marsh area in this system, incrementally, and prevented the retreat of wetland habitats inland as the sea level rises.

- **Otter Pond/Upper Sag Harbor Cove**. Otter Pond and its surrounding land has been severely degraded as a result of decreased tidal flushing, roadway runoff, public access and a large resident waterfowl population. As a result, the pond contributes coliform bacteria to Upper Sag Harbor Cove and is aesthetically unattractive due to its denuded shoreline and algal laden water. Polluted water from Otter Pond, that flows into Upper Sag Harbor Cove, has contributed to the year-round closure of the southeastern end of Upper Sag

Harbor Cove to shellfish harvesting. The Sage Foundation has an ongoing program to improve the foreshore, restoring the fringe of wetland grasses around the perimeter of the pond. This will aid in the filtration of pollutants entering the pond.

▸ **On-site sewage disposal systems in the vicinity of Otter Pond and Upper Sag Harbor Cove should be monitored to protect against potential failing.**

Wetlands

• **Round Pond and Ligonee Brook.** It is imperative that the freshwater features of Round Pond and Ligonee Brook be protected by suitable regulation and preserved, wherever possible, by the rigorous application of preservation strategies including acquisition, easements, reserve area and dedication and setbacks. The system of elements should be treated as a whole in any future management plan.

• **Wetlands Regulation.** The Village regulates development in wetland areas under local law: Bulkheading, Dredging, and Canals {Chapter 12}. This law regulates, by permit, dredging or filling and the construction of canals, bulkheads, and other shoreline structures that may impact tidal wetlands (located above mean high water). The law is not comprehensive, however, because it does not protect all wetland resources. In particular, the law does not address impacts from upland development activities. The Village contains a significant number of freshwater wetland areas and extensive areas of tidal marsh throughout the Sag Harbor Cove Complex. These wetland resources warrant stronger protection, and the NYSDEC, under Articles 24 and 25 of the Environmental Conservation Law, cannot be fully relied upon to protect wetland resources.

▸ **The Village should adopt a separate wetlands law that more specifically outlines provisions for activities that may impact all wetlands - tidal, freshwater, and brackish.** This law should contain a narrative that recognizes all three categories of wetland; outlines the significance of protecting these resources; and delineates where protected resources are found within the Village. This law should also outline the full realm of activities that should be regulated in order to protect wetland resources. The wetlands law would also contain some standards to implement the provisions of the *Conservation* and *Preservation Water Use Districts*. It would specify the necessary setback requirements and structural limitation applicable in these districts. [A copy of the draft Wetlands law is contained in Appendix B.]

• **Wetlands of Otter Pond.** Upland slopes adjacent to Otter Pond should be maintained in as natural a state as possible, with little fertilization. Additionally, Otter Pond has had most of its protective fringe removed. The area to the east of the pond still provides filtration and stabilization for the pond. A wetland restoration project at Otter Pond could restore the beauty, user benefit and quality of the pond. The Sage Foundation is working with Cornell Cooperative Extension - ongoing - to undertake a wetland planting around the perimeter of Otter Pond.

• **Wetland east of Glover Street and Cilli Avenue**. This area, locally referred to as the Cilli Farm, consists of a filled wetland site. Only a remnant ephemeral wetland pool remains to indicate where the original wetland was located. The fill has drastically altered the topography of the system and encouraged the invasion of weedy species such as common reed (*Phragmites australis*) and box elder (*Acer negundo*). Most vegetation has been removed by discing, through farming activity; woolgrass (*Scirpus cyperinus*) is the only valuable wetland plant apparent on the site. Despite the damage, this area still supports numerous species of common amphibians and bird (Held, pers.com.).

▸ **Every effort should be made to restore this area to its original wetland habitat. The Village cannot afford to lose this system due to the limited number of freshwater wetlands remaining in the area. The Village is pursuing alternatives to maintain the property as open space. If possible, the site should be restored and either acquired or protected as open space in perpetuity.**

• **Fore and Aft Pond**. This system has been somewhat degraded by the activities of a developer that attempted to drain the system by excavating a large "drainage" hole (Held, pers. com.). However, the effects of this impact have not been entirely determined. Water levels have been lower in the system since this occurrence, but ascribing this to the excavation is complicated by normal fluctuations in seasonal precipitation.

▸ **The Village should make every effort to protect the site from further impacts and preclude development near this very fragile and valuable system. Additionally, the Village should consider restoring the system if significant negative impact is evident.**

F. HISTORIC RESOURCES AND OVERALL VISUAL QUALITY

Surveys

With the submission of the State and National register nominations in 1992, and the enlargement of the district at the local level, Sag Harbor has identified all of its historic resources. No additional surveys are anticipated. The inventory of properties within the historic district (approximately 1,200) has been entered into a data base which should periodically be updated as new information on properties becomes available. The data base is kept at the Village Clerk's office.

Local Preservation Efforts

Sag Harbor first adopted a local historic preservation local law in 1974. The more recent protection offered under *Chapter 55, Article XV - Historic Preservation and Architectural Review* grants broad regulatory powers to the Board of Historic Preservation and Architectural Review. This Board is "... charged with the duty of maintaining the desirable character of the village ... and exercising sound judgement and of rejecting plans which, in its opinion, are not of harmonious character because of proposed style, materials, mass, line, color, detail ...." Every application for a building permit for the construction, reconstruction, or alteration of a building or structure within the Village falls under the Board's purview. Demolition or removal guidelines are included - designed to especially protect buildings and structures within the Historic District, and designated historic or cultural landmarks.

The historic preservation local law was amended in 1988, when the Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" were adopted as criteria to be used when reviewing plans relating to a property in the Historic District. The amendment allowed the Village to be named a *Certified Local Government (CLG)* in 1989. This program, established through the National Historic Preservation Act, is a nationwide program of financial and technical assistance to preserve historic properties. The naming of the Village of Sag Harbor as a *Certified Local Government* firmly commits Sag Harbor to the protection of its historic resources, in partnership with the State and federal governments. As such, the opportunities for a wide range of preservation projects for the future will enjoy local government support and guidance. Sag Harbor has benefitted from its *CLG* status in receiving grants to assist in performing the Reconnaissance and Intensive Level Survey of Historic Resources (1990/1991); providing training for the Board of Historic Preservation and Architectural Review (1990/1991); producing a training manual for the Board (1991); preparing the State and National Register Historic District nominations (1992); and, preparing brochures concerning Sag Harbor's Historic Preservation Program (1992).

There is constant pressure to further develop/redevelop areas of Sag Harbor, which lie within the Historic District. As the amount of open space within the district is limited, the projects usually involve alterations and additions to existing buildings. The Board sees that constant vigilance, work sessions between building permit applicants and the Board of Historic Preservation and Architectural Review, and cooperation with Village boards and staff members prove to be the most positive forces for preservation advocacy. The relationship with the Village Building Department is particularly critical, and has been useful in resolving some situations on an advisory and work-session basis. However, because of the nature of the Board and its function, preservation is seen largely as a method of controlling development and reacting to permit applicants. Opportunities exist, particularly in the Board's public education role, for preservation to be seen as a positive and pro active force in the community. The Board supports appropriate adaptive reuse of historic buildings, and has taken a lead in publishing information for owners of historic buildings to assist them in appropriate treatments and repairs.

In order to more fully protect the significant nature of Sag Harbor's historic resources, Article XV is further strengthened by the requirement of a "Certificate of Appropriateness." This is required of any building owner who seeks to alter a building exterior within the Historic District, regardless of the requirement of a building permit. In this way, the steady erosion of historic materials and details - that may occur without notice - comes under the same review process as more substantial building projects. Obtaining a Certificate of Appropriateness became a requirement in 1994.

• **Historic Maritime Community**. The Village was included in a study of Long Island Sound and Peconic Bay *Historic Maritime Communities*, conducted by the Department of State; Office of Parks, Recreation and Historic Preservation; and Department of Environmental Conservation during 1996. The study made recommendations regarding the protection and promotion of local maritime heritage resources - including the option that communities may prepare a Historic Maritime Community Plan. Elements of the plan would address developing local awareness of the resources, identifying and protecting resources, maintaining economic vitality, and sharing the community's maritime history. Upon approval of the plan by the Secretary of State and the Commissioner of Parks, Recreation and Historic Preservation, the Village of Sag Harbor would be designated a Historic Maritime Community. The plan would enable the Village to be eligible for assistance under the Department of State-Division of Coastal Resources, and the Heritage Areas Program (Office of Parks, Recreation and Historic Preservation). The Village is in a optimum position to prepare a Historic Maritime Community Plan, since many of the components that would be emphasized in the plan have already been introduced - in other programs.

The following projects should be pursued:

- **Provide outdoor signage which describes, illustrates, and illuminates historic and cultural sites and structures.**
- **Provide accurate historic information to merchants and vendors.**
- **Encourage festivals and celebrations which honor Sag Harbor's past.**
- **Coordinate activities of groups already engaged in interpreting local history to the public -- to make visitation to all institutions logical and progressive, including: Sag Harbor Historical Society/Jail; Old Whaler's Church/Burying Ground; Firehouse Museum; Whaling Museum; Custom House; and John Jermain Library Local history room.**
- **Redesign the existing "Village of Sag Harbor" map - to include information important to visitors: restroom facility locations; museum hours; and park and playground locations. The current map includes both private and public buildings, and gives no indication of which are accessible, or what they have to offer. The street names are unclear, and there is no scale, making the area unappealing to pedestrians.**
- **Design and erect interpretive signage: permanent, year-round signage located near parking areas that would inform visitors about the history and development of the Village.**

- **Design and set up a historic trail: using Village streets as the road map and guide, a painted line could lead visitors to the important sites in the Village. Combined with interpretive signage, the trail would become a self-guided tour.**

Character Areas

There are issues and opportunities within most of the character areas, which need to be addressed to enhance and preserve visual quality. The following provides a description of the issues and opportunities in each character area - many of the opportunities take advantage of the increased visual access to the water - due to the loss of 18th and 19th century structures.

(1) Marina Character Areas - Marinas are important to both the economic health and aesthetic enjoyment of Sag Harbor. Because there are few buildings which relate to marina activities, the views to the water around the marinas are particularly vital and worthy of preservation. Permanent structures which would impede this view should be discouraged.

(2) Marine Recreational Character Areas - This character area is important as it provides public access and use to the waterfront, not just to the view. Public amenities such as rest rooms, changing rooms and service buildings should be located discretely and away from the shoreline.

Long Wharf. While no original material survives its 18th century construction, the existing structure is on the same site as this first construction, and it is symbolic of the long time connection Sag Harbor has to the water and maritime industries. Recent rehabilitation of the wharf has stabilized its structural integrity. However, the visible portions - asphalt pavement, guard rails and minimal bench seating - all ensure that the wharf's primary use will be public parking. Even though the wharf is used as a mooring for the ferry to Connecticut, commercial tour boats, and any visiting commemorative vessel, the overall impression of the wharf is automobiles. The area between the guard rail and the unprotected edge of the wharf is too narrow for safe pedestrian use, yet all the benches are located in this area.

- **A design study should be undertaken which would propose feasible alternatives to the present use, and offer a more attractive space to be utilized by pedestrians, primarily, with less emphasis placed on vehicular use. An opportunity exists to restrict parking on the Long Wharf to the southernmost portion, and to create a park-like atmosphere with planters, seating and other amenities at the northern end. This could be an area for strolling and viewing waterfront activities.**

(3) Marine Natural Character Areas - These areas are best protected and left in their natural state, with extremely limited accessibility. Areas without development are becoming critical in giving wildlife a protected habitat in the increasingly densely populated Village. Marine Natural Character Areas are closely linked with the recommended *Preservation Water Use District*.

▸ **It is recommended that the Village and local land trust continue to acquire privately-owned property in these character areas when the opportunity exists.**

(4) Business District Character Areas - These non-maritime commercial areas are vital to the year-round economy of the Village. Protection to most of the business district is afforded by *Chapter 55, Article XV - Historic Preservation and Architectural Review*. Non-architectural elements, such as the pavement, curbing, trees, fences, parking lots, street lighting, benches, waste containers and street signage all contribute (or detract from) the character. The design of all such site amenities should complement the surrounding landscape.

Curbing. The Village has been experiencing a loss of historic granite curbstones for several years, as the deteriorated stones are replaced with concrete curbs. New curb cuts mandated for accessibility are executed in concrete as well. The concrete curbs form a hard line of uniformity that was uncharacteristic of the sections of granite curbing used formerly.

▸ **Whenever possible, the historic granite curbing should be maintained and reused.**

Trees. The Sag Harbor Tree Committee inventoried the street and publicly-owned trees in the Village - recording their size, species and condition. When completed, this will contribute to a responsible care and replacement program throughout the Village, but particularly necessary in the *VB Village Business District*.

Benches. Benches located in the *VB Village Business District* get plenty of use, but are often located so near to the angled street parking spaces that they are crowded by the bumpers of the cars/trucks that are parked in those spaces. Sitting on a downtown bench becomes an experience with a focus on automobiles, not the street scape or the sidewalk.

▸ **Reorienting or redesigning the benches to take advantage of a more amenable view is recommended, as is locating more benches in areas where parking is not permitted.**

Street layout. The flagpole triangle at the north end of Main Street is on a direct axis with Long Wharf, leading the eye to a view down the wharf to the water. The triangle is also the center of a very confusing 5-way intersection. The overall impression of the spot is one of pavement and traffic, not of an approach to the waterfront.

Signage. Signage is regulated by *Chapter 55, Article XI - Supplemental Use and Dimensional Regulations*, and proposals are reviewed by the Board of Historic Preservation and Architectural Review. Though there are several signs "grandfathered," new signs must be of the type and design appropriate to Sag Harbor's character.

▸ **The design of Town, County and State signs is often less sympathetic, and can be confusing as well as distracting. Signage should be simplified by grouping signs on one post, and matching the size of lettering and color.**

Accessibility. Two public facilities, the Municipal Building and the John Jermain Memorial Library, have recently undertaken major projects to create accessible entrances for the handicapped. As more projects will be required to allow businesses to meet the requirements of the Americans with Disabilities Act (ADA), Sag Harbor must be prepared to work creatively with public officials and business owners to find appropriate solutions.

(5) Residential Character Areas - The Village's historic core residential areas have been well protected under *Chapter 55, Article XV - Historic Preservation and Architectural Review* - projects which require building permits must receive approval from the Board of Historic Preservation and Architectural Review, which uses as criteria for review the Secretary of the Interior's Standards for Rehabilitation.

However, the twentieth century neighborhoods are reviewed with more general design criteria; each of the neighborhoods possess individual character. Maintaining this character when the resident population is increasingly year-round is difficult. More residents are improving and enlarging their houses, and new houses are being built on vacant lots. This is especially critical in the "Azurest," "Ninevah" and "Sag Harbor Hills" neighborhoods, where the overall character is still very much light woodland.

▸ **Maintaining setbacks and encouraging builders to retain existing trees will help this area maintain its character under pressure from development.**

(6) Industrial Character Areas - These sites - which reference Sag Harbor's past manufacturing and industrial involvement - are particularly threatened, since most activities associated with such uses are not permitted under current zoning. Some buildings, such as the Grumman buildings on Long Wharf, have been adaptively reused, but have lost much of their industrial character in the process.

▸ **The Bulova Watchcase Factory is the most substantial of the industrial landmarks in the Village. Any new use proposed for the structure should respect the visual qualities which identify it as an industrial building of the nineteenth century.**

(7) Open Space Character Areas - Available upland open space in Sag Harbor is at a premium. In other local communities, environmentally sensitive small lots have been deeded to the Nature Conservancy, the Peconic Land Trust or the local municipality to insure their perpetual natural state.

▸ **Parcels which are appropriate candidates for such conservation should be identified, and negotiations should be initiated with these appropriate not-for-profits or the Village.**

(8) Multi-Unit Residential Character Areas - These areas of densely developed residential housing are currently limited to the area of West Water Street. As waterfront property east of this area becomes available, it is not likely that new proposals will include development of similar character. The disadvantage of this type of development is the limited public access allowed to the waterfront.

(9) Institutional Character Areas - The schools, churches, meeting halls, retreat centers and museums which fall into this character area category are scattered throughout the Village. Public visibility is a large problem. Most of these institutions could use a higher public profile - to promote activities and services.

- **The Village should redesign the existing "Village of Sag Harbor" map - to show locations and provide information important to visitors regarding such facilities: accessibility concerns; public restroom locations; museum hours; church services.**

(10) Agricultural Character Areas - There is just one site in the Village which still reflects its former agricultural use - the Cilli farm, located on Glover Street. The property has been the subject of debate and draft development proposals for a number of years. The large land area makes the site an attractive one to developers. It is not likely that the site will go undeveloped much longer, although the additional infrastructure necessary to accommodate the development have yet to be put into place.

- **Any development on this site should try to maximize the open quality of the landscape, and emphasize that new buildings be clustered on the lot. The Village is pursuing alternatives to maintain the property as open space.**